TEXTILE WORLD

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1954

ANNUAL REVIEW & FORECAST NUMBER

NEITHER FEAST NOR FAMINE IN '54
Last half may be better..... 81

1953 MILL PRODUCTION UP 4% FROM '52
But '54 may be down 8%..... 82

PURCHASES FOR '53 AT ALL-TIME HIGH
And this year may set another record..... 84

BLENDS BROADEN PROCESSING APPROACH
All-fiber mill isn't far away..... 87

FINISHING CHALKS UP PROGRESS
Cotton goes chemical, and wool blends increase..... 90

MAINTENANCE CHALLENGES PLANT ENGINEER
His scope is broadening..... 93

DISTURBING EMPLOYEE ATTITUDES SPOTTED
Job satisfaction isn't what it should be..... 94

POLITICS DOMINATE GOVERNMENT ACTION
Trade and tariff policy won't change much..... 95

IN THIS ISSUE:

Money for Better Mills (Editorial).... 4
Annual Review and Forecast..... 81
The Improved Acrilan Fiber..... 97
THPC Flame-Resistant Treatment.....101
Roving Run-Out Constants.....102
Spring-Needle Jerseys 104
New Air-Conditioned Weave Room.....106
Increase Loom Production Up to 5%..108
New Throwing Formulas.....110
Castle Creek's Screen Printing.....113
Waste-Removal System 116
F.-F. Handling Ideas 118
Companion-Color Dyeing 120
Selecting Transmission Belts.....122
Spare-Parts System Saves Time.....124
Weaving Wool and Cotton Carpets....126
Fiber-Testing Survey 131

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INDEX to ADVERTISERS
Keyed by Products
See Page 281

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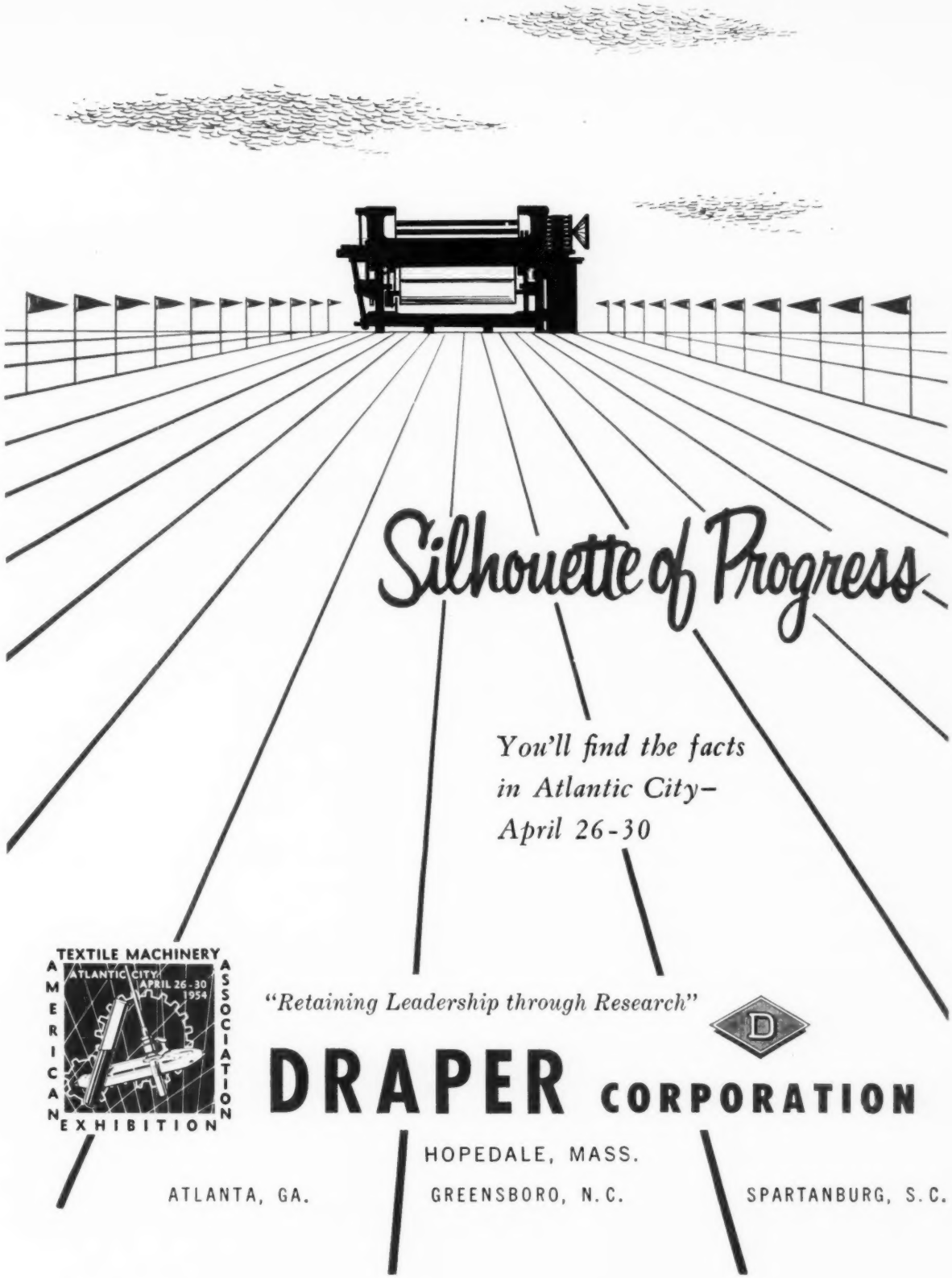
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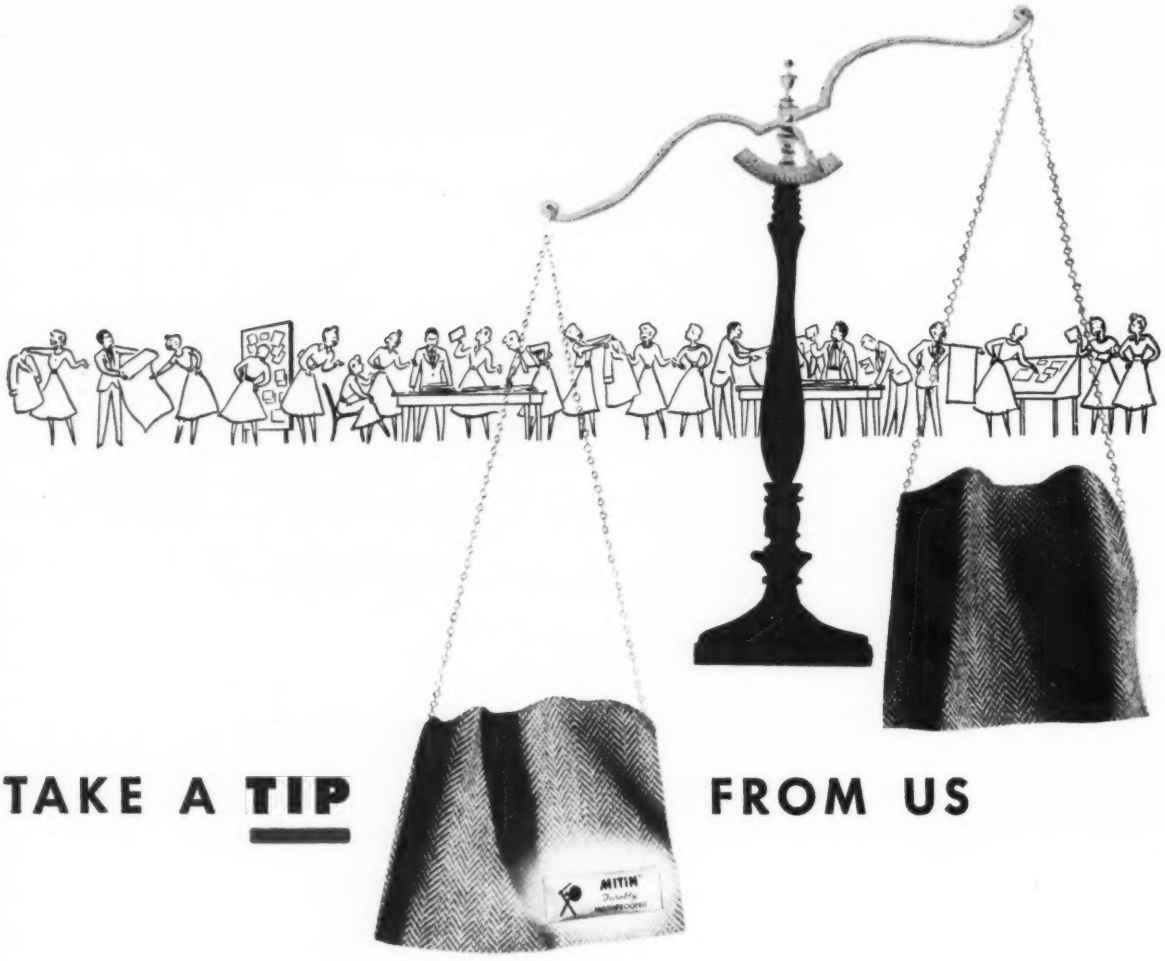

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DEPARTMENTS

Editorial	4
Exploring the Textile Community	135
Kinks and Short-Cuts	156
Mill Maintenance	236
New Dyes and Chemicals	150
News About Men	264
News About Mills	258
News About Suppliers	252
News of the Month	246
Obituary	268
Pointers for Supervisors	133
Questions and Answers	154
Reader Service	169
Reviews of Books	234
Round Table	153
Textile Equipment News	137
Textile Calendar	250
Textile Tickles	153
Trade Literature	170
Advertisers' Index	281

Table of Contents

FEBRUARY • 1954
Volume 104 Number 2

◀ KEYED ACCORDING TO READER INTEREST ▶

WEAVER	SPINNER	FINISHER	KNITTER			SYNTHETICS
				Feature Articles		
W		F		Money for Better Mills (Editorial)	4	S
W		F		Annual REVIEW AND FORECAST Section	81	S
W		F		The Improved ACRILAN Fiber	97	S
W		F		THPC Flame-Resistant Treatment	101	S
				Constants for Average ROVING RUN-OUTS	102	S
				Spark Sales With Spring-Needle JERSEYS	104	S
W				Pacolet's New Air-Conditioned WEAVE ROOM	106	S
W				Increase LOOM PRODUCTION With Lizards	108	
W				New THROWING Formulas	110	S
		F		Castle Creek's SCREEN PRINTING	113	S
				WASTE-REMOVAL System	116	S
				HANDLING IDEAS Speed F.-F. Production	118	S
		F		Companion Color DYEING	120	S
				How To Select TRANSMISSION BELTS	122	S
W		F		SPARE-PARTS System Saves Fixers' Time	124	S
W				Weaving Wool and Cotton CARPETS	126	
				COTTON-FIBER-TESTING Survey	131	
				Textile Equipment News		
		F		New Continuous ROLL FEED	137	S
W		F		TESTER Gives Results in 3 to 10 Mins.	137	S
				PIN DRAFTER Runs at 55 to 66 Yds. per Min.	138	S
W		F		Parks-Cramer CLEANER Is More Powerful	138	S
W				LOOM SWITCH Has Push-Button Operation	142	S
W		F		INSTRUMENT Tests Fabric Handle	142	S
W		F		Patented VALVE in Production	142	S
W		F		COLOR-CODE Control Plan	142	S
W				Electronic WARPER Has Hydraulic Jacks	142	S
				Feed Units Double SPRING-NEEDLE Output	144	S
		F		SKEIN DRYER	144	S
W				Narrow-Fabric-Loom QUILLS	144	S
W		F		TESTER Measures Cloth Thickness	144	S
W		F		Four TESTING INSTRUMENTS From Germany	146	S
W		F		Device Maintains WINDING TENSION	148	S
W		F		Electric CLUTCH Improves Transmission	148	S
		F		Improved EXPANDER BRACKET	148	S
				Double-Point CARD FLATS	148	S
W				Heavy-Duty REBEAMER	150	S
W		F		Easy-To-Read Hand TACHOMETER	150	S
				Kinks and Short-Cuts		
W				Old Broomsticks Make Good LOOM FLAGS	156	S
W				Cover LOOMS With Vinyl To Prevent Soiling	156	S
W				Fasten Shuttle GUARD WIRES With a Bolt	156	S
				Keep GRINDSTONES Wet With Old Auto Tires	157	S
W				How To Reduce Tying-in WASTE	158	S
W				Extra SPRING Keeps Harnesses Sturdy	160	S
W		F		Brush Keeps Lint Off FLUORESCENT LIGHTS	160	S
				How To Find Diameter Of Steel CABLE	160	S
				Nail Polish Stops Runs in KNITTED FABRIC	160	S
				Use a Jack To Place PULLEYS on a Shaft	162	S
				FAN Removes Fumes From Metallizing	162	S
W		F		Lights Beside Doffer Aid Woolen CARDING	162	S
W		F		Stop BUILDER-RACK Slipping	162	S
W				Homemade Puller Removes CAMSHAFT GEARS	164	S
				How To Measure TOP-ROLL Wear	164	S
				RUBBER CAP Prevents Yarn Snagging	164	S
W		F		Dyehouse Uses a Portable MIXING TANK	166	S
				Snap-Action Switch Stops SPINNING FRAME	166	S
W				Controlling TOP-BEAM Tension	166	S

THE Long-Range VIEW

Money for Better Mills

"**A large share** of American industry's equipment is ancient, of obsolete design, and incapable of attaining the efficiency that is made possible by modern production techniques."

That statement, with facts to back it up, appeared in an editorial insert between pages 76 and 77 in the January issue of TEXTILE WORLD entitled "No Room for Industrial Complacency."

Almost in the same mail, we received a statement from a major textile-machinery manufacturer to the effect that since World War II U. S. textile mills have not been replacing machinery and equipment anything like as fast as present installations have been wearing out.

It is a matter of record that mills have spent vast sums of money for machinery, equipment, and supplies every year since the end of the war. In 1953, this type of mill expenditures reached another new high (see p. 84). Since postwar spending reached full stride, expenditures every year have been three to four times as high as prewar.

That looks like a good record, but there are two jokers in the deck.

First, prices are considerably higher than they were in 1939; so the replacement rate, so far as units of machinery and equipment installed are concerned, is not properly reflected by the number of dollars spent. Since mill expenditures in 1953 included a higher percentage of auxiliary equipment such as motors, air conditioning, and materials-handling equipment than before the war, it is a moot question whether processing machinery is being replaced as fast as it was before the war. It is almost certain that it has not been replaced rapidly enough to make up for the war years when no machinery was replaced.

Second, even if the replacement rate were the same as prewar and the war years' wear and tear had been fully compensated for, the prewar replacement rate would be far too slow now. New machines are making old machines obsolete, and unprofitable, much faster now than prewar; and to hold a relative position in the industry, a mill cannot follow its 1930s pattern.

Add to these two conditions the fact that machines are run faster and more hours now than prewar, and you come up with the fact that year by year mills are becoming more obsolete than they were fifteen years ago.

Why?

One very important reason is money. If a mill paid $10,000 for a machine or piece of equipment in the 1930s and wants to replace it now, it must lay out something like $20,000 to $30,000.

Where is the money to come from?

Theoretically, it should be on hand in a special fund set aside by the mill for replacement. The tax plan is set up so that each year during the useful life of the machine the mill can hold back from taxes a part of the cost of the machine. But when time comes to replace the machine, there is only $10,000 in the fund, and the mill is $10,000 to $20,000 short.

Therefore, we might say that Fault No. 1 with the present machinery-depreciation program is that it is based entirely on the original cost of machinery and equipment rather than replacement cost. (We understand that one European country has reappraised plant and equipment since the war and permits depreciation recovery on the reappraised values.)

Fault No. 2 is that the number of years the government requires mills to spread out their depreciation recovery is a hangover from the horse-and-buggy days of the industry. Set up during the Depression and put into effect, we think, in 1933, Schedule F of the income-tax return, which covers depreciation, was based on the useful life of machinery and equipment prior to that time. It requires that most of the machinery used by mills be depreciated in twenty or more years.

In 1933, that depreciation rate was all right; but with twenty-four-hour operation, wear and tear are far greater than Schedule F was set up to cover, and faster obsolescence makes a mill that now has machinery and equipment that is twenty or more years old well out of date.

So it is safe to say that the government's present depreciation schedule is forcing mills to become antiquated, is standing in the way of progress, and is discouraging the development of still better machinery and equipment.

Everyone knows that money buried in a sock contributes nothing to the prosperity of the country. It is equally true that keeping a textile machine in place beyond its efficient life is similar to burying money in a sock. When a machine is replaced, work and money move in a wide circle: from the mill to the workers who erect the machine, to the transportation company that hauls it, to the manufacturer who makes it, to the steel companies that supply the metal, to the machine-tool manufacturers who make the metal-working machines, to retailers who supply the workers at every stage, to the government in taxes at every step, etc.

Economists agree that prosperity depends in a large measure on capital expenditures by companies. A more-liberal depreciation program not only would make it possible for mills to be kept more productive, but it would also be an influence in maintaining a high level of business activity.

O. M. Thomas

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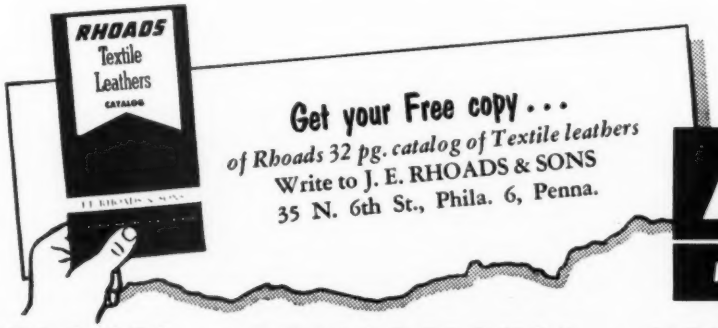

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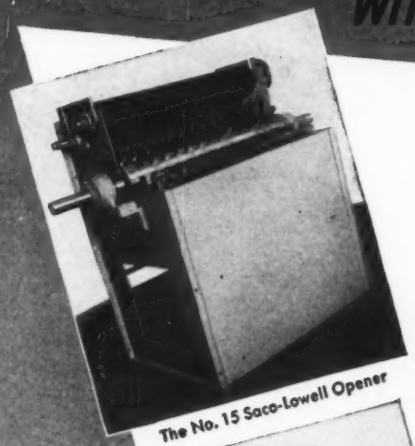

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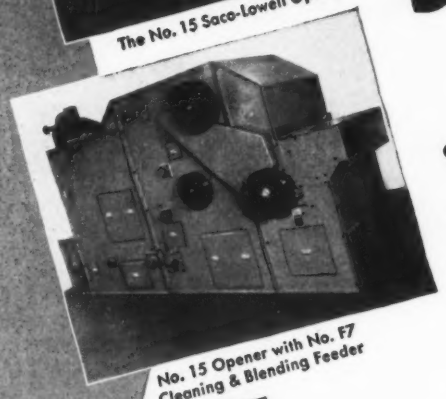

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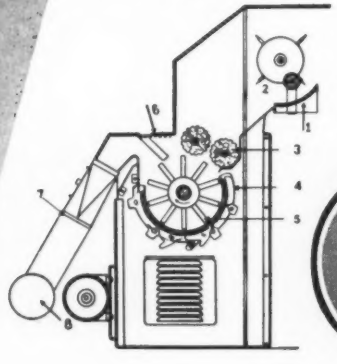

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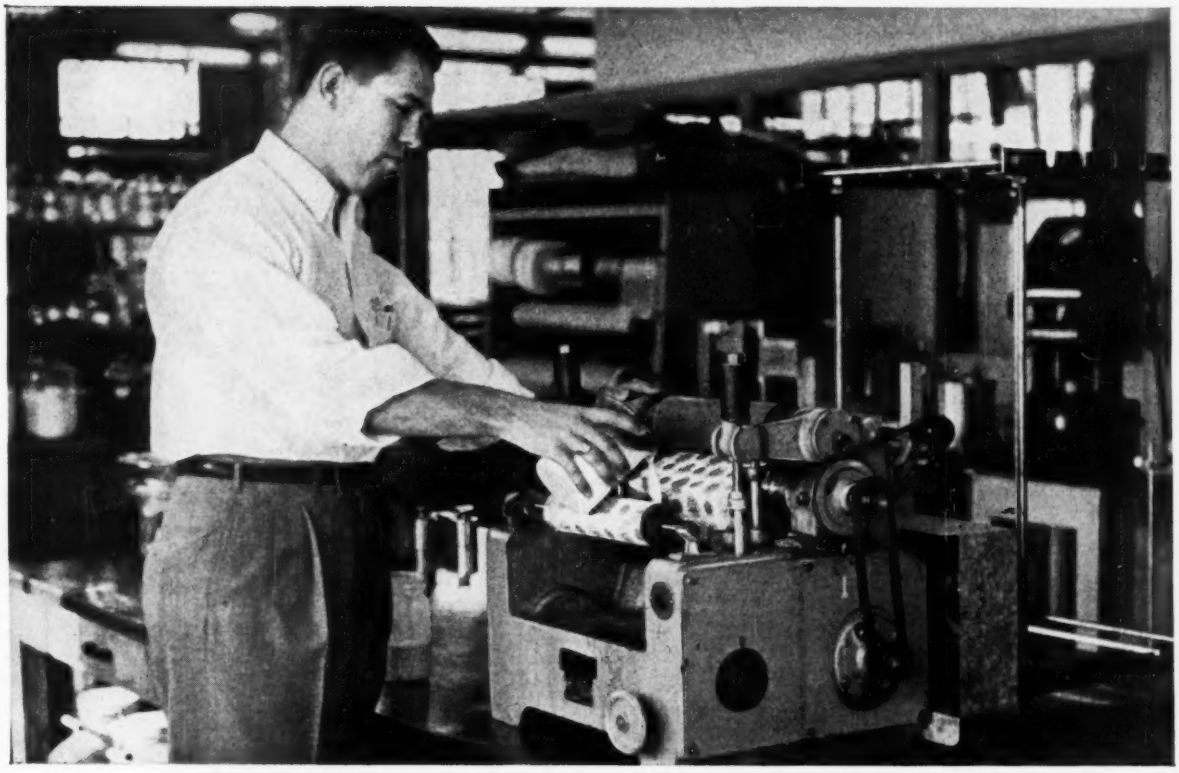

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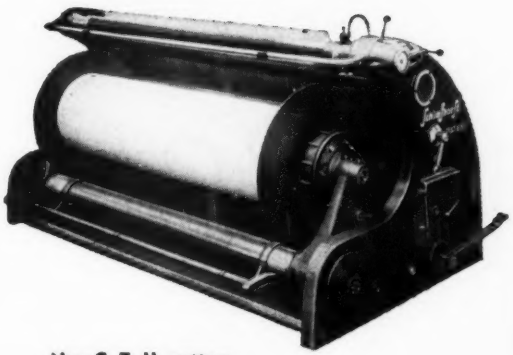

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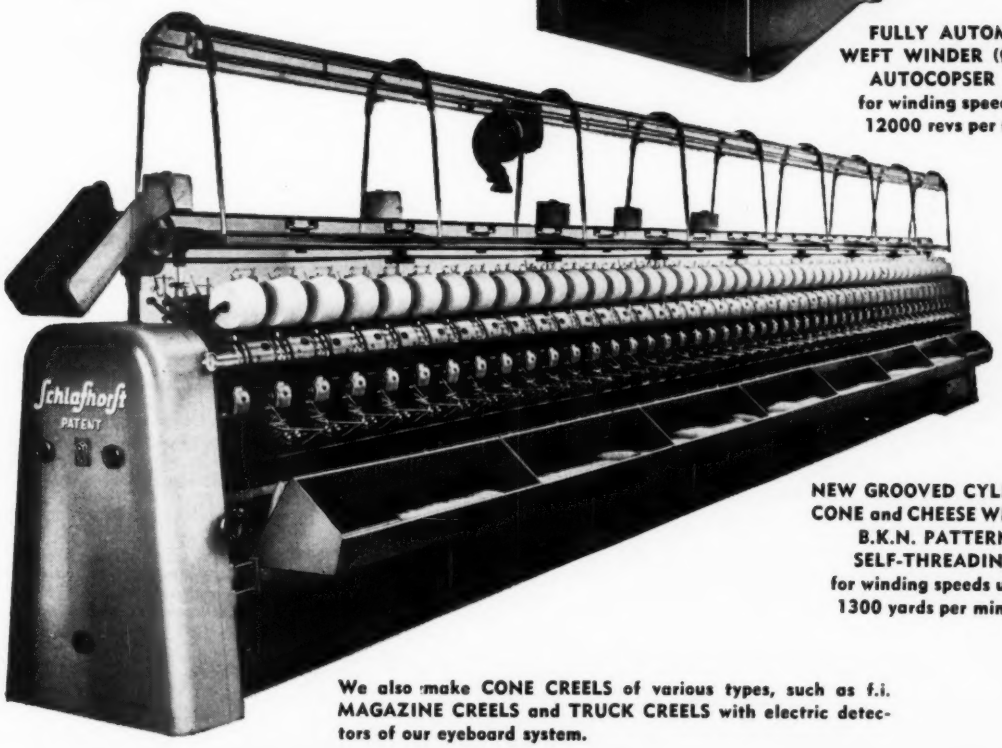


NEW GROOVED CYLINDER
CONE and CHEESE WINDER
B.K.N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute

We also make CONE CREELS of various types, such as f.i. MAGAZINE CREELS and TRUCK CREELS with electric detectors of our eyeboard system.

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

ANOTHER NEW FAFNIR...

Ball Bearing "Economy Package"

Type PB
Pressed Steel
Pillow Block

The new Type PB Series Pillow Block is developed to fill a specific need for a high-quality, precision ball bearing unit at the lowest possible cost. It is made for *light duty* applications where a low-cost "packaged" unit offers definite manufacturing and servicing advantages . . . on agricultural equipment, conveyors, light-duty fans and similar types of machinery involving the transmission of power.

The Type PB Series Pillow Block opens up new opportunities to add extra product sales features and to lower maintenance costs . . . another example of the Fafnir "attitude and aptitude". Send for new, descriptive bulletin. The Fafnir Bearing Company, New Britain, Conn.

OUTSTANDING FEATURES

- Low Cost
- Precision Ball Bearing . . . Fafnir Wide Inner Ring Bearing* with Self-locking Collar and efficient Plya-Seals.
- Two-piece separable pressed-steel housing.
- Self-aligning . . . unrestricted in all directions at assembly.
- Occupies less space than other pillow blocks.
- Light weight . . . combined with ample strength.
- Only two bolt holes required in assembly.
- Ample capacity for radial, thrust or combined loads.
- Pre-lubricated with long-life grease.
- Available for shaft sizes ½" to 1¼" inclusive.

*Easiest bearing of all to install. Counterbored, eccentric, mated cam construction of collar and inner ring assures positive locking action without set screws, lock nuts or adapters.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

For more information, write direct or use Reader Service post card.

Memo: See C&K's New Looms

American Textile Machinery Exhibition

ATLANTIC CITY, NEW JERSEY
APRIL 26-30, 1954

Crompton & Knowles Loom Works will occupy spaces 323-338 and 330AA-331AA in the huge exhibition hall at Atlantic City, April 26-30, 1954. Some 270 exhibitors have already spoken for over 90,000 square feet of this building. Crompton & Knowles' space will be larger than they have occupied before because of the variety of new looms they plan to show.

Crompton & Knowles' entire line will place even more emphasis than heretofore on the flexibility and versatility built into their looms and the latitude thus given the cloth designer and weaver. To be shown are:

1. A new Narrow Fabric Loom weaving zipper tape.

2. An entirely new W-3A Loom equipped with a Select-A-Pic mechanism with which many pick-and-pick weaves may be woven automatically.

3. One of C&K's latest Jacquards.

4. Five new looms never shown before. These are:

   a. One loom weaving a gray flannel filling mix.

   b. Another loom for the automatic weaving of a two-color denim.

   c. Another "first"—a loom that can weave automatically 4x1 filament dress goods.

   d. A loom developed for 4x1 spun rayon blends.

   e. A 2x1 loom weaving upholstery fabrics.

It is planned to build these new looms with a single color rotary magazine, but they also may be equipped for two and four-color work. They can be equipped with undercam harness motions, end cam harness motions, dobbies, head motions, and jacquards.

All of the new looms will be equipped with new letoffs, although any of the present letoffs may be applied to them. All of the new looms may be equipped with any kind of conventional takeups.

Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa.

Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

 For more information, write direct or use Reader Service post card.

... just to keep you posted!

WHITIN
will exhibit
10 NOTABLE MACHINES

- ★ Winder for Filling Bobbins
- ★ Roto-Drafter
- ★ Roving Frame
- ★ Spinning Frame

For American System

- ★ Up Twister for Tire Cord
- ★ Wool Spinning Frame
- ★ Drawing Frame
- ★ Roving Frame
- ★ Spinning Frame

For Cotton and Rayon Systems

- ★ Ring Twister, All Purpose

These machines can be seen in operation in Booth 180 at the

AMERICAN TEXTILE MACHINERY EXHIBITION

APRIL 26 - 30, 1954 • ATLANTIC CITY, N. J.

This display of ten machines will be the most important and significant ever made by Whitin. Every visitor will find that great strides in design and engineering have been made on machinery for his mill. There will be, for instance, a new machine entirely different from anything now on the market for the process involved; another so sharply improved and advanced that it will set standards never before attainable; one incorporating unusual and distinctive features long desired but hitherto unavailable; also one that has a long and very successful mill record but never before displayed in public, and several others with a large number of outstanding improvements of many kinds that will be warmly received and applauded by the textile industry.

These ten machines whether for processing wool, worsted, cotton, synthetic or blended fibers — are the result of Whitin Research. They are being offered to you for three specific reasons: to reduce your costs, to improve the quality of your product, and to increase your profits. Each is superbly built and each will take its place as the leader in its field.

Don't miss this great display of great machinery by Whitin!

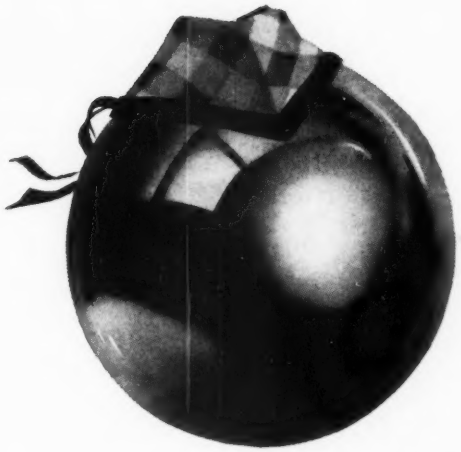
In addition to this machinery display, we will also have in Booth 24 (on the stage) an interesting exhibit of Repair Parts and Supplies.

Whitin MACHINE WORKS

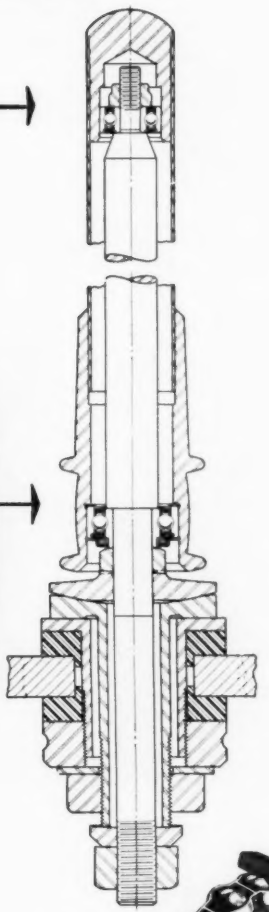
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

For more information, write direct or use Reader Service post card.



Money Savers in the Mills



NOTHING ROLLS LIKE A BALL

Top performance at top speed . . . textile equipment must be built to last! And New Departure **ball** bearings have proved themselves in this field . . . with their low friction operation at high speeds . . . their smoother running that gives more even yarn twist . . . their saving of power. Highly important is the N-D-Seal bearing. This outstanding **ball** bearing requires no service of *any* kind for years at a stretch! Truly a Money Saver in the Mills.

NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Plants also in Meriden, Connecticut, and Sandusky, Ohio

the Hall of Learning . . .

is an apt name for Convention Hall in Atlantic City during the American Textile Machinery Exhibition.

Over 250 exhibitors will display the largest collection of ultra-modern textile machinery, supplies, and accessories ever gathered together in one building.

Learning how to cut costs, how to increase your production and quality is easy in the pleasant atmosphere of Atlantic City.

Make your hotel reservations early through
The Housing Secretary
16 Central Pier
Atlantic City, New Jersey

AMERICAN TEXTILE MACHINERY ASSOCIATION EXHIBITION
ATLANTIC CITY APRIL 26-30 1954

American Textile Machinery Association Exhibition

APRIL 26-30, 1954, ATLANTIC CITY, NEW JERSEY

For additional details on the Exhibition itself write
A. T. M. A. Press Bureau
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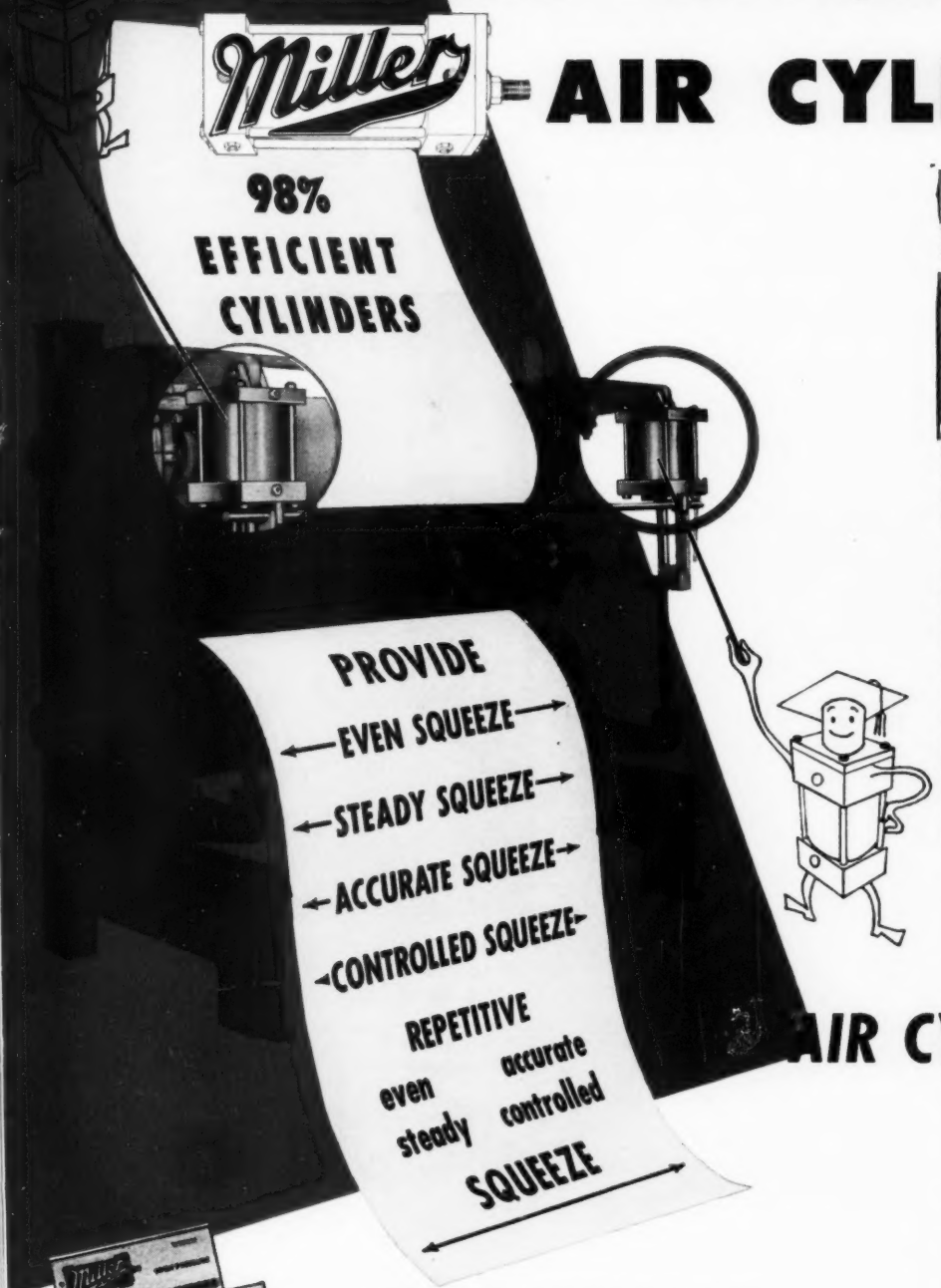
Vienna, Virginia

EQUALIZE THE SQUEEZE with Miller AIR CYLINDERS



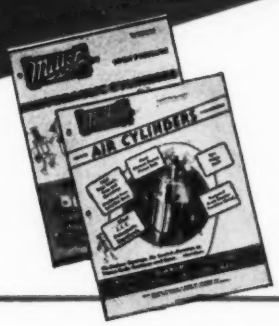
Two Miller Air Cylinders (one at each end of the pressure roll) provide the steady, even "squeeze" so essential for the pressure rolls of Textile machinery.

The variation in friction co-efficiency in these cylinders is practically negligible. Thus, whether the pressure is to be constantly held or reapplied as required, the "twin" cylinders can be depended upon to react simultaneously and in perfect unison to the slightest adjustment. Also, any desired pressure on the rolls can be duplicated and maintained at will.

These top performance qualities are "built-in" features of Miller Standard Air Cylinders proven 98% plus efficient (at 80 psi). The Miller Non-Adjustable Seals assure *consistency* of performance throughout cylinder life. This consistency is further guaranteed over exceedingly long periods of time by such standard Miller features as solid steel heads and caps, hard chrome plated piston rods, dirt wiper seals and non-corrosive cylinder barrels.

AIR CYLINDERS FOR

- Padders
- Washers
- Steamers
- Rope Squeezers
- Bleaching Equipment
- Dyeing Equipment
- Other Textile Machinery



WRITE FOR CYLINDER BULLETINS A-105 and H-104

Complete Miller cylinder line includes: air cylinders, 1½" to 20" bores, 200 PSI operation; low pressure hydraulic cylinders, 1½" to 6" bores for 500 PSI operation, 8" to 14" bores for 250 PSI; high pressure hydraulic cylinders, 1½" to 12" bores, 2000-3000 PSI operation. All mounting styles available.

SALES AND SERVICE FROM COAST TO COAST

CLEVELAND • YOUNGSTOWN • DAYTON • PITTSBURGH • PHILADELPHIA • BOSTON • HARTFORD • NEW YORK CITY • BUFFALO • ST. PAUL • GRAND RAPIDS • DETROIT • FLINT • FORT WAYNE • SOUTH BEND • INDIANAPOLIS • MILWAUKEE • LOUISVILLE • KANSAS CITY • SEATTLE • LOS ANGELES • SAN FRANCISCO • BALTIMORE • DENVER • ST. LOUIS • MOLINE • CHICAGO • HOUSTON • TORONTO, CANADA and OTHER AREAS

MILLER MOTOR COMPANY

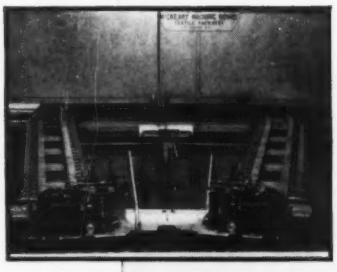
2002-06 N. Hawthorne Ave., Melrose Park, Ill.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

Are these 5 speed thieves

McCreary 1-pass system†

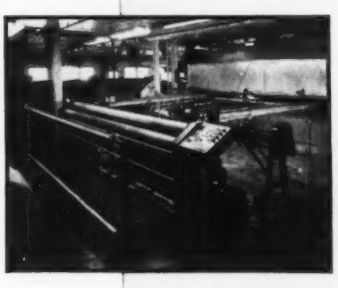
provides low cost finishing of synthetic tricots and woven fabrics



Automatic overfeed combined with new type roller bearing tentering frame adjusts for cloths of any width from narrow nets to wide tricots.

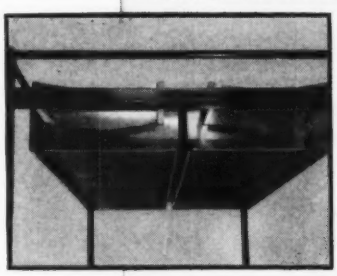
Exclusive features . .

- Automatic Pinning and Overfeed
- Roller Bearing Tentering Frames
- Electronic Guider Control
- Jet Type Forced Air Dryer
- *G-E Calrod Radiant Heat Setting
- *G-E Reactrol Control



New super-sensitive guider-finger, with electronic controls and *G-E Dynamic Breaking, permits very close, accurate edge pinning of the finest cloth.

The McCreary CONTINUOUS PROCESS embodies the most advanced electronic and mechanical processes yet developed for feeding, drying and setting nylon, other synthetic and resin treated fabrics of superior quality and at substantial savings. The automatic feed gives positive and accurate control of the feeding of any width fabrics, assuring greater yield. The high velocity jet type forced air dryer continues this high speed low-cost operation. The electro setter sets fabrics accurately within the known temperature range of all synthetics . . . and again at low cost and with high speed. Installed in famous mills located throughout the world, the McCreary Process has proven itself the lowest cost method of finishing cloth yet available.



Electro setting unit combines *G-E Calrod radiant heaters and *G-E Reactrol Control, an electronic system which holds cloth temperature within the most rigid tolerances.

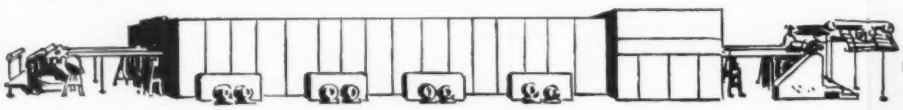
McCreary MACHINE WORKS, INC.

Manufacturer of Textile Finishing Machinery Since 1874

Cohoes, New York

* Reg. U.S. Pat. Office

† Patents Applied For



WRITE TODAY FOR DESCRIPTIVE BROCHURE

Are these 5 speed-thieves stealing your profits?

Most mill men agree that a speed variation of as little as 1% may mean the difference between profit and loss in the textile industry. Yet these five conditions can cause a speed variation up to 11%.

1. Most induction motor speeds are guaranteed only to within 2% of rated speeds, fully loaded.

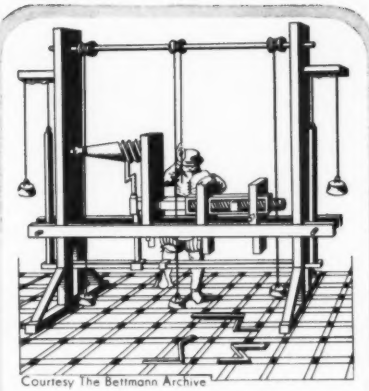
2. Average speed variation from belt creep is approximately 1%.

3. Speed losses on V-drives of 4-1 ratio can be as high as 4% from the calculated speed due to changes in the pitch line of the belt under full load.

4. Average speed loss from belt slip is 2% even with properly engineered drives.

5. Actual pitch line of a V-belt and its mating sheaves can vary from the theoretical pitch line enough to cause a speed change up to 2%.

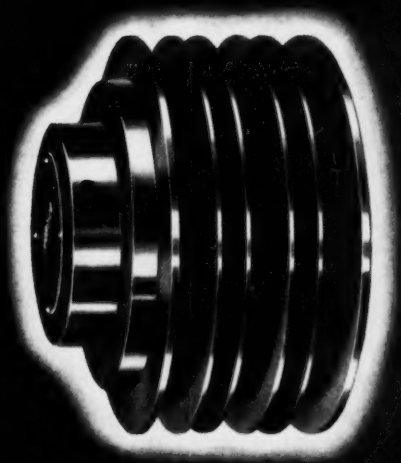
Stop these speed-thieves by using American Adjustable-Speed Drives. And remember that American Adjustable-Speed Drives are recognized as the most proficient and economical method of adjusting the speed of textile machinery to the best speed for any process. See your distributor or write for full details. No obligation. The American Pulley Company, 4226 Wissahickon Ave., Philadelphia 29, Pa.



Courtesy The Bettmann Archive

Recognize it?

It's a screw lathe—1565 version. A clever arrangement of cords and pulleys made it unusually versatile. By using pulleys of different diameters the operator could cut screws of any desired pitch. The same kind of inventiveness that produced this early example of power transmission developed modern, precision equipment like these American Adjustable-Speed Drives.



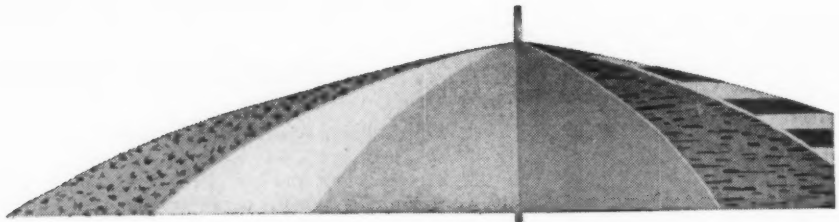
AMERICAN ADJUSTABLE—SPEED SHEAVES with patented, double-taper construction. Split tapered hubs produce powerful wedge grip on shaft. Expanding tapered sleeve locks flanges tight, makes adjustments easy. Entire unit dynamically balanced for smooth operation.

At the PROFIT end of the machine

Power Transmission by

AMERICAN

PULLEY COMPANY



TRADEMARK

Celaperm's new color-pigments

Open new markets for you today...

Celanese*

CELAPERM*

the acetate yarn with the "sealed-in" color

Currently, fabrics of Celanese Celaperm are big business. In draperies, shower curtains, bedspreads, slip covers and closet accessories for the home. In clothing, swimwear, night wear and intimate apparel for the whole family.

Now, with the development of brand new pigments faster than any previously obtainable, Celaperm means new markets and even bigger business for you.

See the Celaperm color range today. There are now nineteen colors in this group—all specifically planned to fit the fashion needs of all the important textile markets that use Celaperm. See how Celanese colors your future. Celanese Corporation of America, N. Y. 16; Boston, Mass.; Camden, N. J.; Charlotte, N. C.

*Reg. U.S. Pat. Off.

LUBRICATING—or Just Oiling?

The above cartoon is not meant to infer that your oilers are doing a hit or miss job, but to remind you that your lubrication progress may not be keeping pace with your technological progress.

The first step in lubrication progress is planned lubrication. This means proper application of the right kind and amount of a lubricant at the right time.

Gulf Sales Engineers, working hand-in-hand with your personnel, will suggest a method of planned lubrication for every room in your mill.

Planned lubrication can give added life and improved performance to your machines. It can cut power consumption and part replacements, as well as halt rust and corrosion.

Use the chart below as a guide in determining whether your mill utilizes sound lubrication practices. If not, call in a Gulf Sales Engineer. He is trained in petroleum technology and has a thorough knowledge of textile machinery operation. He will help you reap the benefits of planned lubrication.

GULF INDUSTRIAL LUBRICATION

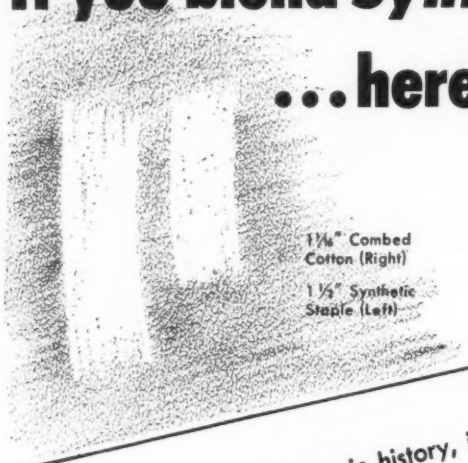
Gulf Oil Corporation
Gulf Refining Company
GULF BUILDING, PITTSBURGH, PA.

LUBRICATION CHECK CHART

Do you utilize these sound lubrication practices?

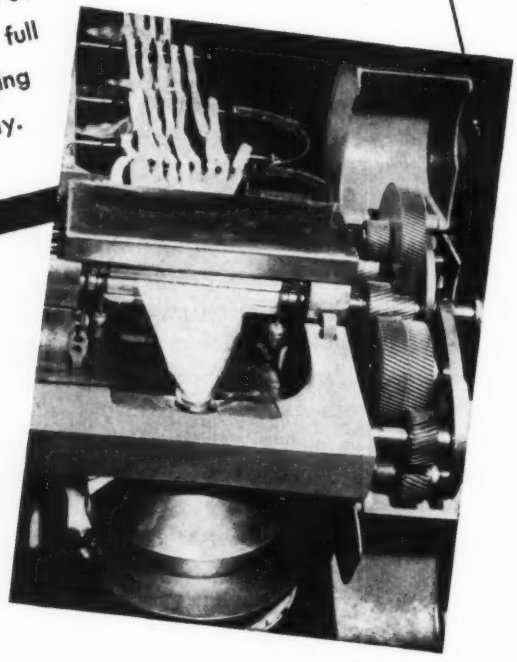
YES	NO	
☐	☐	Trained lubrication personnel
☐	☐	Right lubricant for the job
☐	☐	Proper application of the lubricant
☐	☐	Definite lubrication schedule
☐	☐	Proper storage and handling

If you blend *Synthetics* and *Combed Stock* ...here's valuable news for you



Now, for the first time in history, it is possible for you to satisfactorily blend synthetic staple and combed cotton of varying lengths on your drawing frames. Mills report the blending of 1⅛" combed cotton and 1½" synthetic staple without any evidence of shearing or "cockling".

Now, for the first time, you can combine less expensive staple combed cotton and longer staple synthetics and get a far stronger and far better yarn in addition. If you blend synthetics and combed cotton you'll be delighted when you get the full facts on the Ideal High Speed Ball Bearing Drawing Rolls.* Write, wire, or call today.



Ideal Rolls practically eliminate static on synthetics and they produce far more high-quality drawing per delivery . . . excellent reasons for investigating fully no matter what type fibers you spin.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

TEXTILE MACHINERY EXHIBITION — ATLANTIC CITY, APRIL 26-30, 1954 — AMERICAN ASSOCIATION

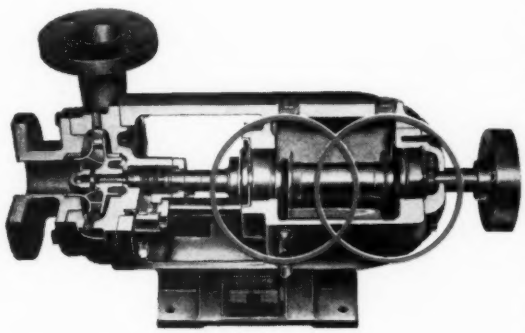
Ideal Industries, Inc.
Bessemer City, N. C.

For more information, write direct or use Reader Service post card.

This Ring Takes a Fling

To give you a Cradle-Mounted Pump

THAT'S WORTH MORE



This oil ring is the best known method of lubricating cradle-mounted pump bearings. Two of them ride the shaft of Ingersoll-Rand's CRV pumps, dip into the oil reservoir, fling an abundance of oil and mist onto the ball bearings.

But these are more than just flinger rings. They are examples of the extra value that's built into every I-R cradle-mounted pump . . . to give you more for your money in design and construction, that adds up to longer pump life with less maintenance.

There are easier, less expensive ways to lubricate bearings; easier, cheaper ways to build pumps—but none of these are the Ingersoll-Rand way. Check today on the I-R way of building more on-the-job value into every pump. Your nearest distributor or Ingersoll-Rand branch office will be glad to tell you, without obligation, the complete story about Cradle-Mounted pumps and Motorpumps.

Cameron Pumps ARE Better

9-3

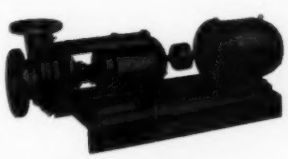
Ingersoll-Rand

Cameron Pump Division
11 Broadway, New York 4, N. Y.

Single-Stage Motorpump
Capacities to 1800 GPM

Two-Stage Motorpump
Capacities to 300 GPM

Four-Stage Motorpump
Capacities to 60 GPM



Cradle-Mounted Pump
Capacities to 2600 GPM

HOW TO CURE CONTINUOUS CRABBING

and 24 other textile troubles!

YOU'LL have no "continuous crabbing" about continuous crabbing, or any of two dozen other textile operations listed below, if you hand the worries over to Taylor. 35 years ago Taylor was the first instrument manufacturer to get interested in the textile business. We introduced the first practical system of slasher control in 1919. We've grown up with the industry and today we can offer you instrumentation that will save you money on practically any operation in your mill from the first phase of processing to the last. Ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

SIZE COOKING
SIZE STORAGE KETTLE
SLASHING
KIER BLEACHING
TENTERING
PIECE DYEING
PACKAGE DYEING
BEAM DYEING
FINISHING
MERCERIZING
SKEIN DYEING
CONTINUOUS BLEACHING
TOP DYEING
JIG DYEING
WOOL SCOURING
CONTINUOUS DYEING
DRYING
CARBONIZING
WASHING
PADDING
DECATING
POWER PLANT
AIR CONDITIONING
CAKE SOAKING AND DRYING

TEXTILE MACHINERY EXHIBITION — ATLANTIC CITY APRIL 26-30 1954 — AMERICAN ASSOCIATION

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

Light-fast · Water-fast · Brilliant

perfect for playclothes

ORANGE RF SALT

Coupled with selected Naphthols, National Orange RF Salt produces shades of outstanding light-fastness and brilliance for colors of this type. It also has excellent fastness to washing and soda boil, and is especially recommended for dyeing or printing cotton or viscose children's wear, play and sports clothes as well as washable upholstery and drapery fabrics.

The nearest National Aniline office will be pleased to send you a data sheet showing a range of dyeings and giving complete fastness properties of National Orange RF Salt coupled with 13 selected Naphthols.

And for prompt service on any dyestuff need, always phone National Aniline *first.*

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N.Y. · BOwling Green 9-2240

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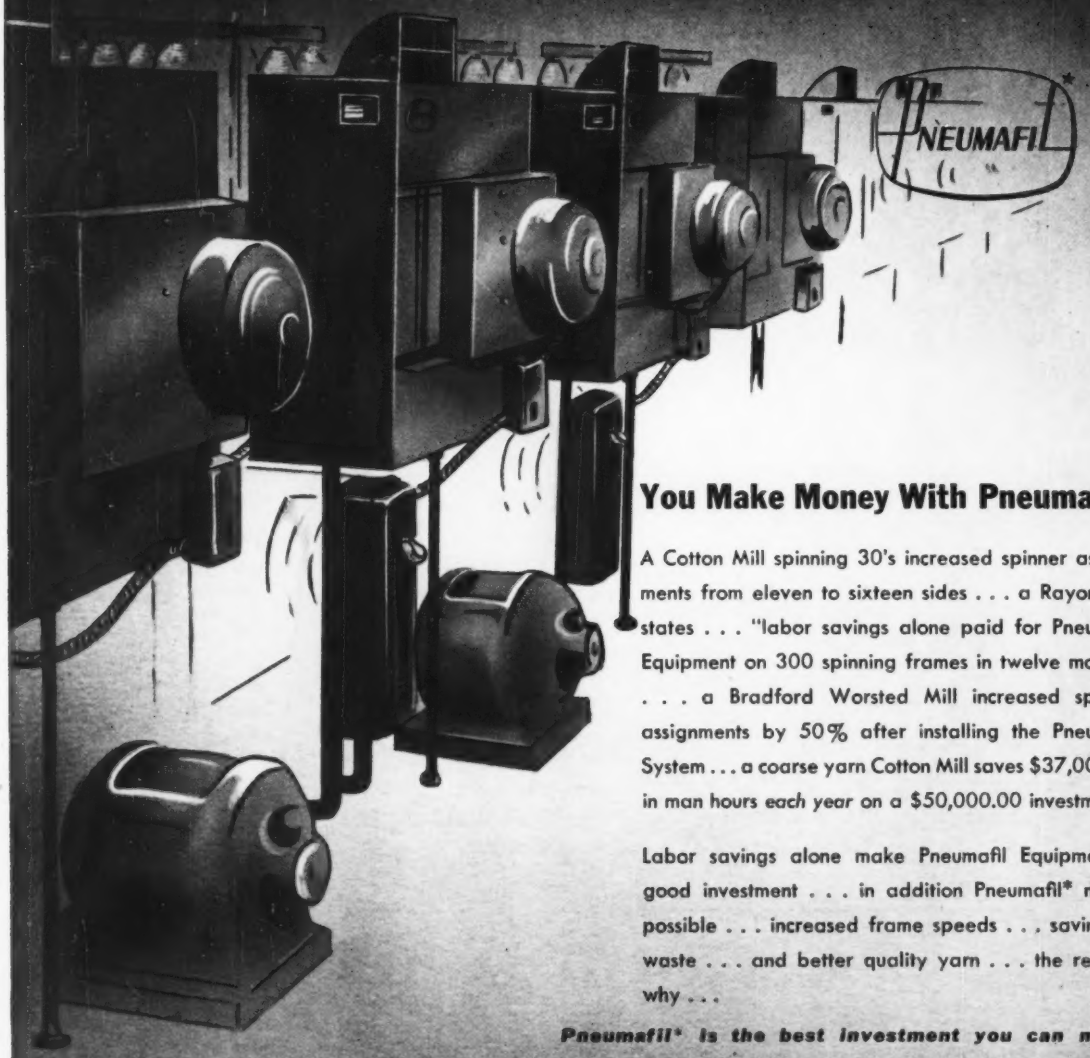
Allied Chemical

COTTON · spun rayon · and wool

Pneumafil* Means...

More Spinning With Less Spending



You Make Money With Pneumafil*

A Cotton Mill spinning 30's increased spinner assignments from eleven to sixteen sides . . . a Rayon Mill states . . . "labor savings alone paid for Pneumafil Equipment on 300 spinning frames in twelve months" . . . a Bradford Worsted Mill increased spinner assignments by 50% after installing the Pneumafil System . . . a coarse yarn Cotton Mill saves $37,000.00 in man hours *each year* on a $50,000.00 investment.

Labor savings alone make Pneumafil Equipment a good investment . . . in addition Pneumafil* makes possible . . . increased frame speeds . . . savings in waste . . . and better quality yarn . . . the reasons why . . .

Pneumafil* is the best investment you can make.

*Trade Mark

PNEUMAFIL CORPORATION • Charlotte 8, North Carolina

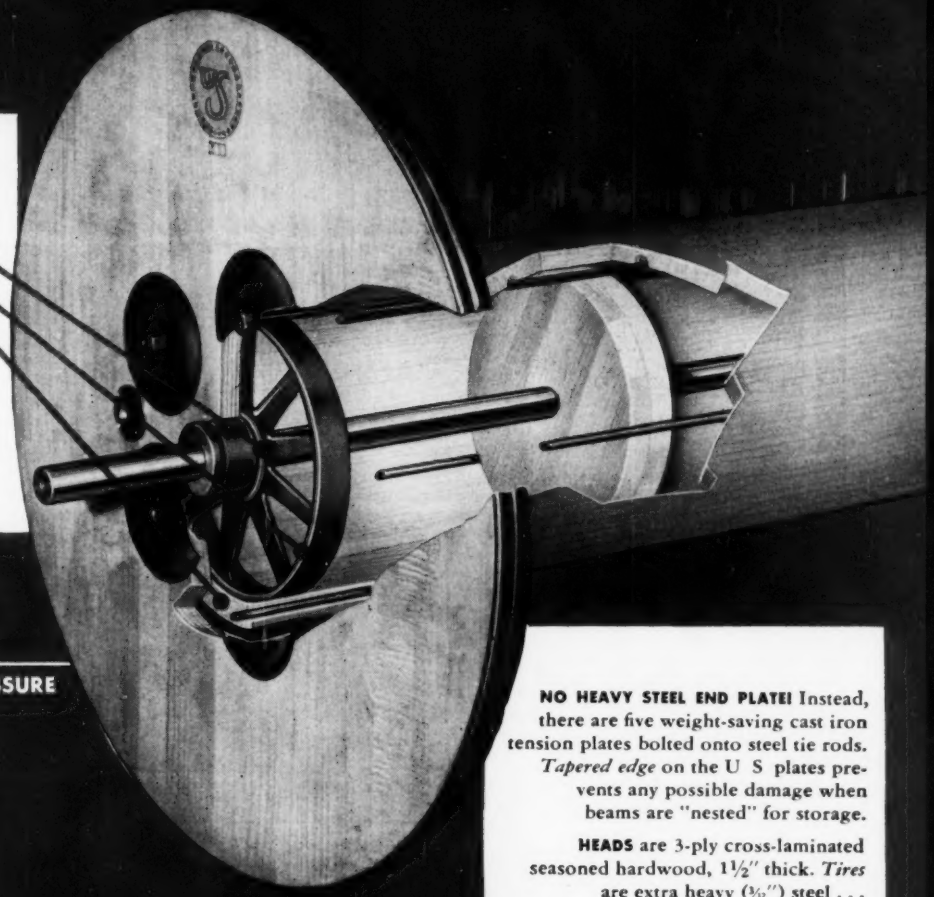
Sales Offices: Needham Hts., Mass.—Atlanta

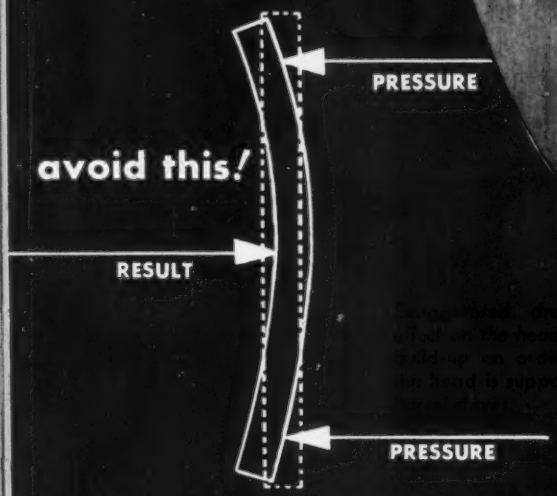
COTTON...spun rayon...and wool

3-POINT SUPPORT FOR THE BEAM HEAD

shoulder at hub of casting
periphery of casting
ends of staves

U S Warper Beams are *all* built with 3-point support, which provides additional resistance against outward deflection during build-up of the beam.





NO HEAVY STEEL END PLATE! Instead, there are five weight-saving cast iron tension plates bolted onto steel tie rods. *Tapered edge* on the U S plates prevents any possible damage when beams are "nested" for storage.

HEADS are 3-ply cross-laminated seasoned hardwood, 1½" thick. *Tires* are extra heavy (3/32") steel . . . grooved, heated and shrunk-fitted onto the heads for tighter assembly. Eastern pine barrel staves are supported at each end by round cast iron supports.

U S BOBBIN & SHUTTLE CO.

SEND FOR SET OF BLUEPRINTS
and Bulletin CWB
for detailed construction features of U S Warper Beams, Heads and Tension Plates for Cotton, Spun Rayon and Wool.

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General Sales Office LAWRENCE, MASS.
Southern Division Headquarters 1912 Augusta Rd., GREENVILLE, S. C.
CHARLOTTE, N. C. JOHNSON CITY, TENN. LaGRANGE, GA.
PHILADELPHIA, PA. PROVIDENCE, R. I. MINNEAPOLIS, MINN.
DALLAS: O. T. Daniel, Textile Supply Co. LOS ANGELES: E. G. Paules, 1762 W. Vernon Ave.
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Make NATIONAL your source for travelers. We offer over 18,000 different weights, sizes, and styles . . . also special designs to meet special requirements. No matter what fibres you are running, it pays to consult with National. Full stocks are maintained in Pawtucket and Charlotte: U. S. Standard (American, Hicks, Wilson, Elliptic) and Wentworth (Double Duty or P. B., Gravity, Gravity Express, Bal-Ellipsoid). National Ring Traveler Co. and Sterling Division, Pawtucket, R. I. and Charlotte, N. C.

See us at Booths 31-32

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NATIONAL RING TRAVELER CO. PAWT. R.I. U.S.A.

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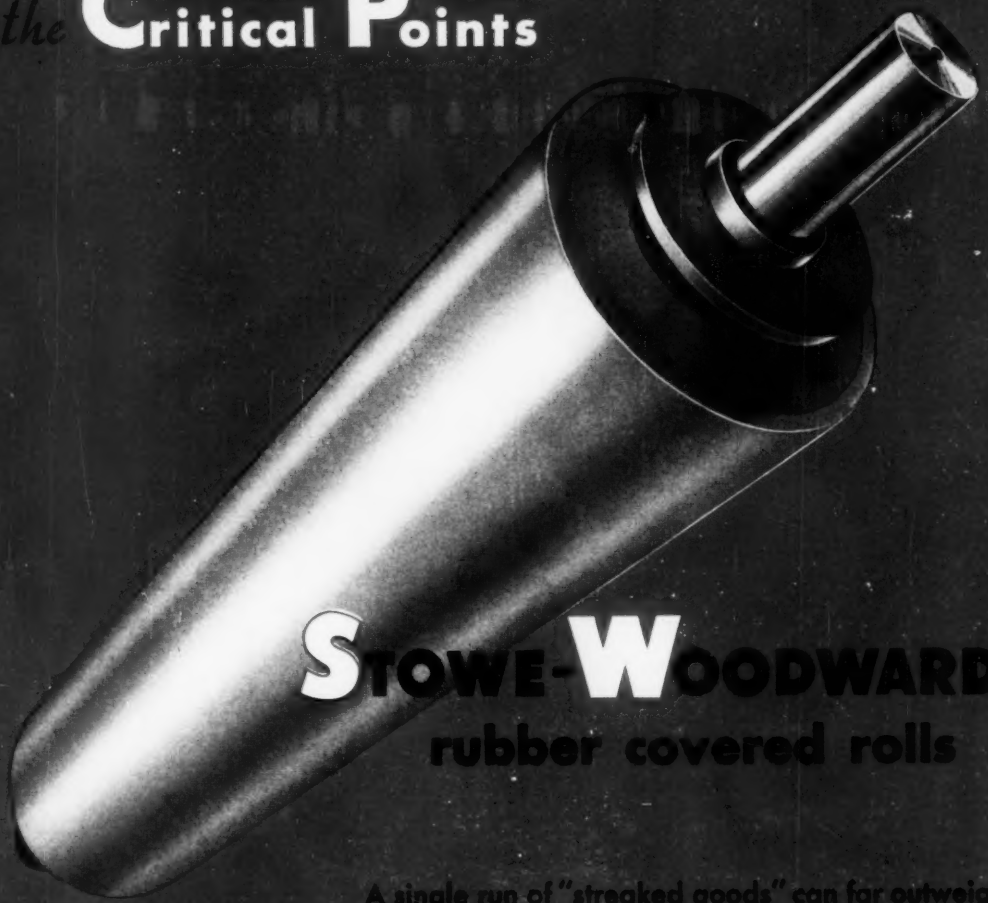
OLDEST AND LARGEST MANUFACTURER OF RING SPINNING AND TWISTING TRAVELERS IN THE UNITED STATES

for **Quality Control**
at the **Critical Points**



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A single run of "streaked goods" can far outweigh the cost of Stowe-Woodward rubber covered rolls whose uniform extraction prevents the damage.

S-W INC.

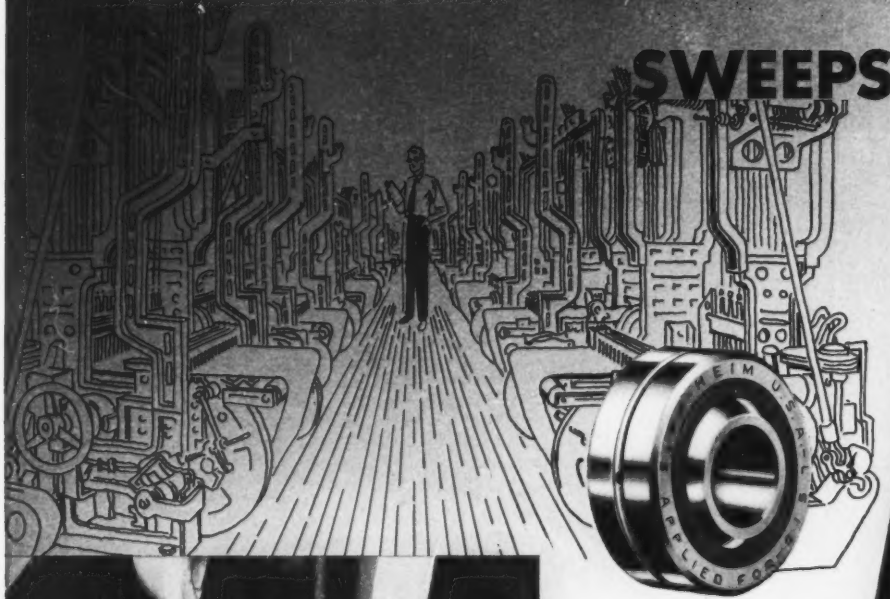
STOWE-WOODWARD, Inc.
Craftsmen in rubber rolls

NEWTON UPPER FALLS 64, MASSACHUSETTS

Our Wool Oil Service has proved so successful

HEIM *Unibal*

SWEEPSTICK



The Heim Unibal Spherical Bearing, which is pressed into a rubber-bonded fabric sweepstick, is the real reason why the Heim Sweepstick delivers such smooth, trouble-free pick action. There is just no possibility for the stud hole to enlarge and cause trouble. The bearing is self-aligning and long wearing.
Put the Heim Sweepstick to work on your looms now and get set for longer, trouble-free operation with no "down time" due to sweepstick failure.

Write for bulletin and prices.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

Our Wool Oil Service has proved so successful

We'll Stick Our Neck Out—

To Guarantee You Definite Benefits in Writing!

Yes, as part of our wool oil service, we *put in writing* the benefits you will receive! This exclusive service—the most complete offered by the industry—includes...

Scientific Analysis of your mill operations by a Socony-Vacuum Engineer.

Complete Engineering Report with recommendations of correct wool oils.

Proved Products that meet desired degrees of scourability and discoloration resistance.

Laboratory Service where tests are made of mill samples to control performance on the job.

Progress Reports of benefits achieved, plus recommendations for further improvements.

Call your Socony-Vacuum representative for further details!

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process products

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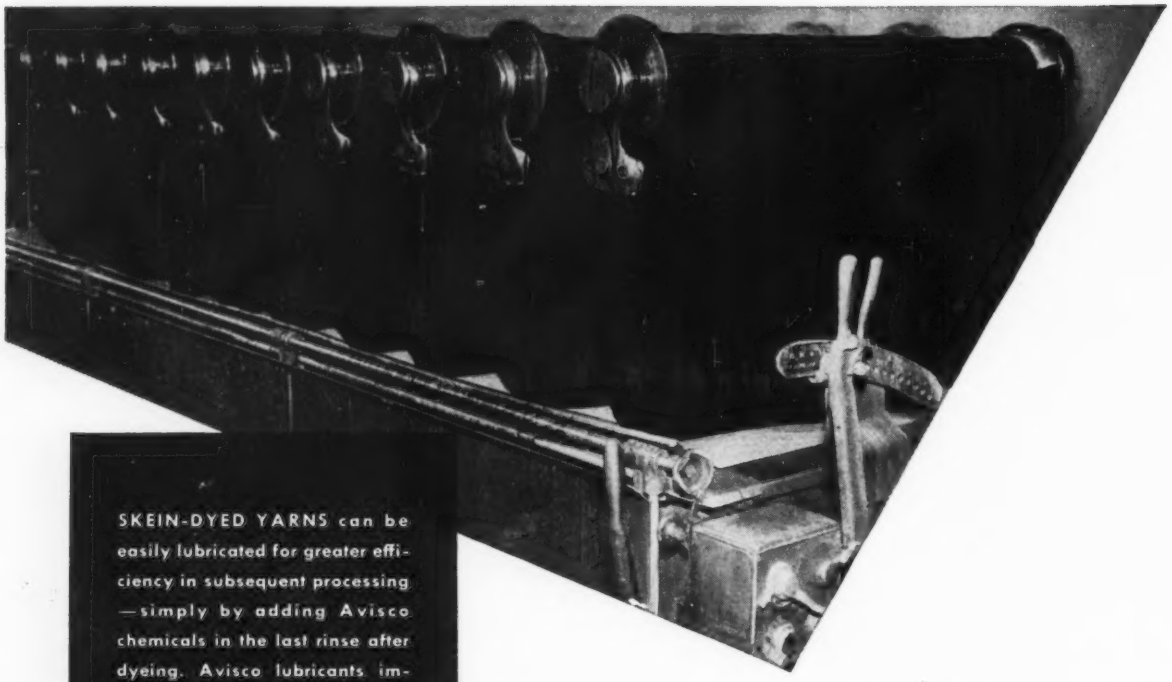

SKEIN-DYED YARNS can be easily lubricated for greater efficiency in subsequent processing—simply by adding Avisco chemicals in the last rinse after dyeing. Avisco lubricants improve winding . . . aid in making more uniform fabric . . . promote better stitch formation. They do not affect shade values, or colorfastness to light and washing. These solid, 100% active materials do not settle out or deteriorate in storage. They emulsify readily in hot water.

Improve processing of dyed yarn . . .

with AVISCO textile chemicals

The surface of your yarn—which determines much of quality and processing efficiency—gets the best possible treatment when you use Avisco textile chemicals. These "jack of all trades" materials simultaneously lubricate, soften and control static. And these lubricants have exceptional stability; they never discolor, wick out, or turn rancid in storage.

Avisco textile chemicals are supplied in many varied types, applicable to processing of fiber, yarn and fabric . . . for all fibers, both natural and man-made. Avisco specialists offer expert assistance in selection of materials and techniques for using them in your own mill. Write Textile Chemicals Division, P. O. Box 455, Marcus Hook, Pa. or Textile Chemicals Sales, 1617 Pennsylvania Blvd., Philadelphia, Pa.

Send for your copy of this new booklet—
"Avisco Textile Chemicals"

Avisco textile chemicals were developed in cooperation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware

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AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers

Another SONOCO *First*

THE REVOLUTIONARY DUROWELD PROCESS

TEXTILE MACHINERY AMERICAN EXHIBITION ASSOCIATION

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- DACRON TUBES
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- and many other possible uses!

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DUROWELD by SONOCO — developed to give the textile industry a tough, low cost, reusable carrier.

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DUROWELD by SONOCO was perfected only after months of exhaustive research and tests, and represents an important carrier advancement with industry-wide benefits.

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Faster knitting plus continuous means greater profits

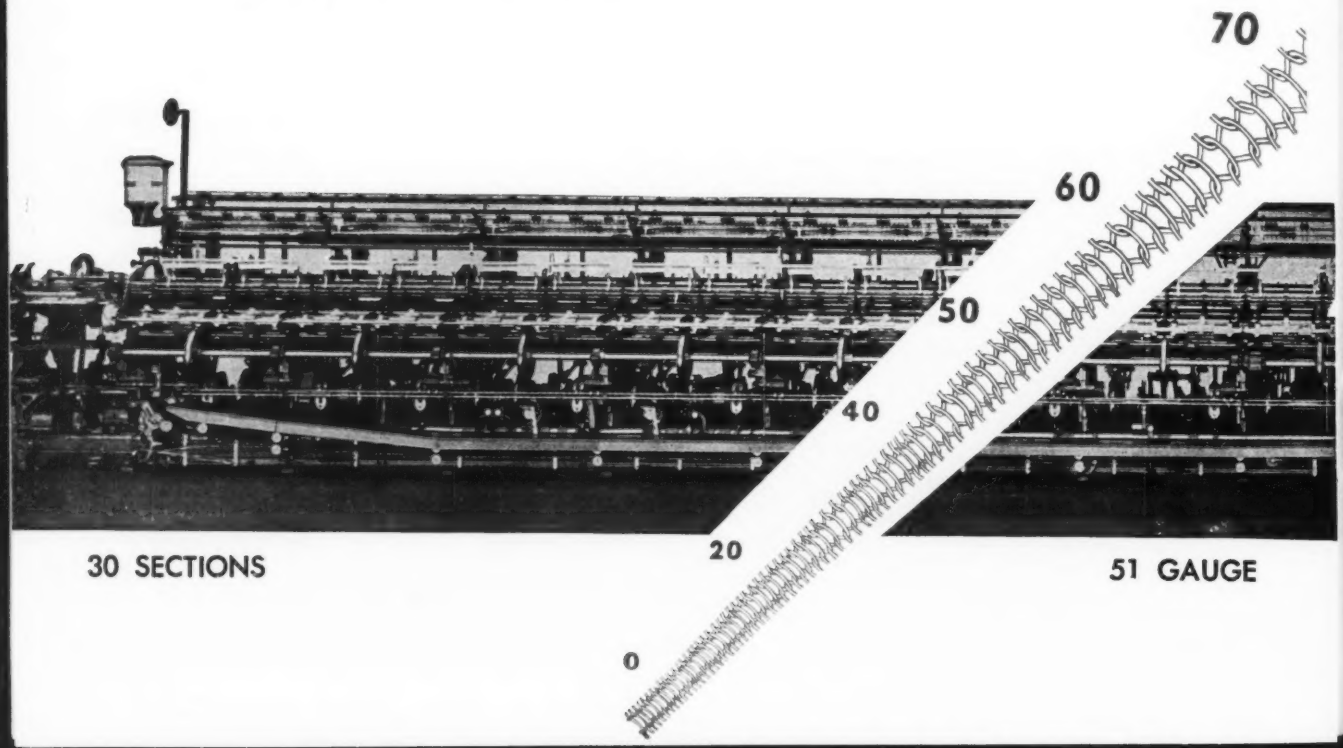
The new "Reading 100" Full-Fashioned Knitting Machine is not only the fastest multiple section machine of its kind, but it is also the most reliable.

Here is a marvel of mechanical precision — 30 sections, practically vibration-free, operating at 100 courses per minute.

Check these performance advantages that make this new Reading machine outstanding:

- Complete speed flexibility... because the Automatic Speed Selector provides unlimited stations for making speed changes throughout the knitting of the blank.
- Consistent narrowing speed of 75 courses per minute . . . because of end control with its rigid construction.
- Easy to check needle bar position for controlling stocking width . . . because of newly designed cam motions.
- Less time required for making or checking cam settings . . . because all cam adjustments, except needle bar and balancing cams, are made at one point.
- Quieter, more accurate rocking action . . . because three reinforced selvedge rockers are uniformly positioned over the length of the machine.
- More uniform control of presser shaft . . . because three lace helper units are provided.
- Positive protection against damage to slurcam box housings, jacks, jack beds, sinkers and verge plates . . . because of camshaft operated catchbar safety.
- More accurate and satisfactory operation in the production of fine fabrics at increased speeds . . . because front catchbar and knockover bit shafts have been increased in diameter from 1-3/16 inches to 1-9/16 inches, thus reducing torque and sag in these important elements.

If you want extra courses per minute *without* interruption, extra dozens of fine quality full-fashioned stockings, extra profits — see the "Reading 100" without delay. Or write us for full details.



operation

100

95

90

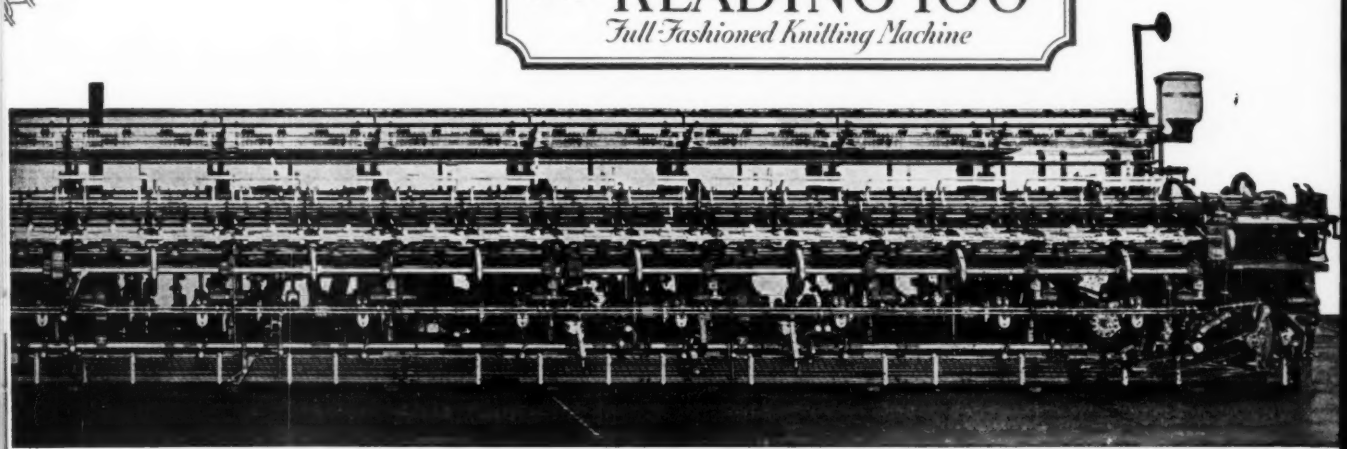
85

80

75

100 courses per minute

The "READING 100"
Full Fashioned Knitting Machine



60 GAUGE

66 GAUGE

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INGOLSTADT:
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from spinning to dyeing . . .

There's nothing better than Cross yarn

CROSS yarn is as fine in quality as money, time, long years of experience, and modern methods can produce. So if you want fine quality cotton knitting yarn, spun from Strict Middling (the *only* grade of raw cotton we buy), get CROSS double-carded or combed yarn, bleached or dyed. See what a difference quality makes!

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We will match your shade or you may choose from more than 700 shades now shown in the CROSS color catalog.

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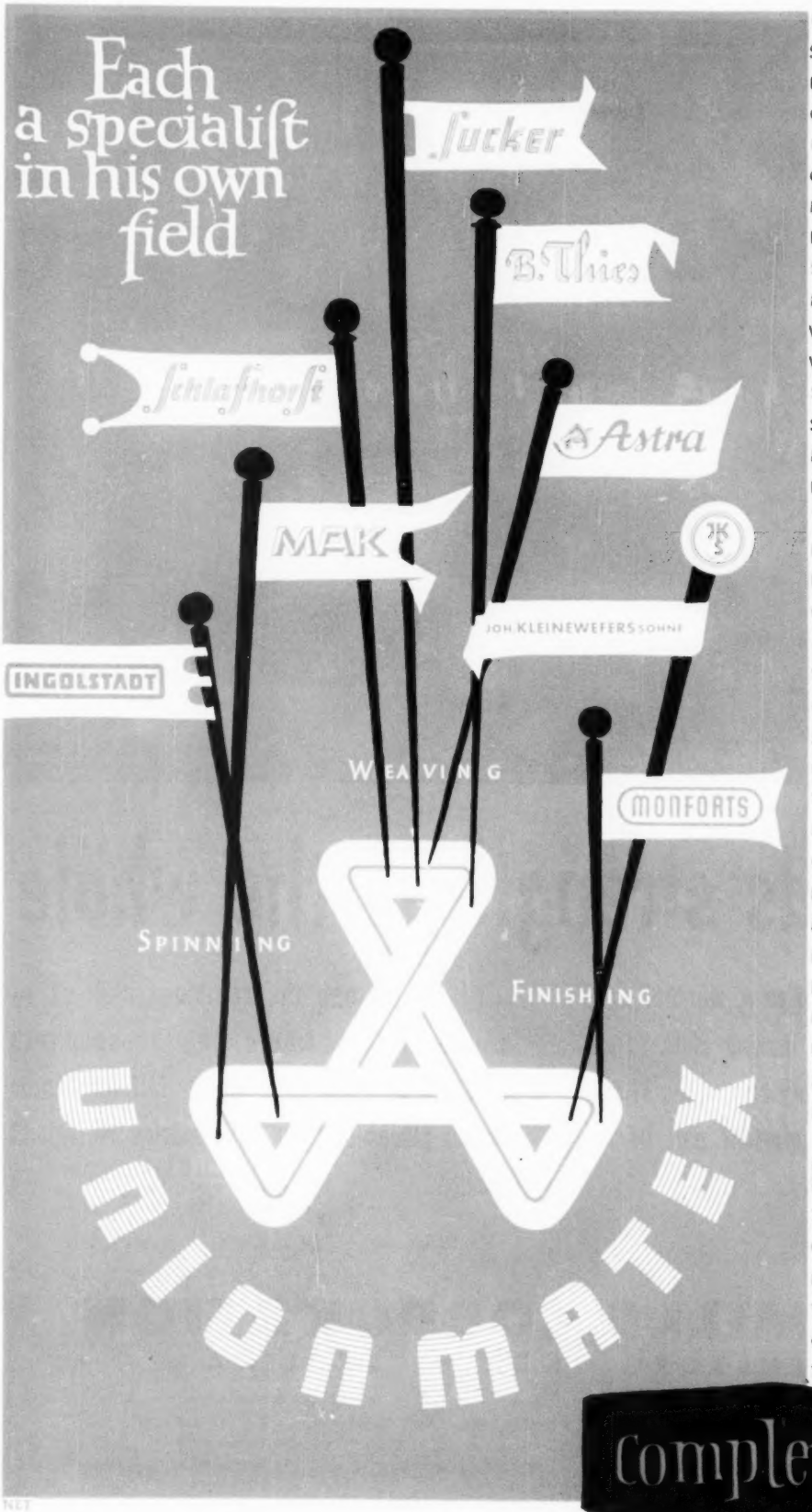

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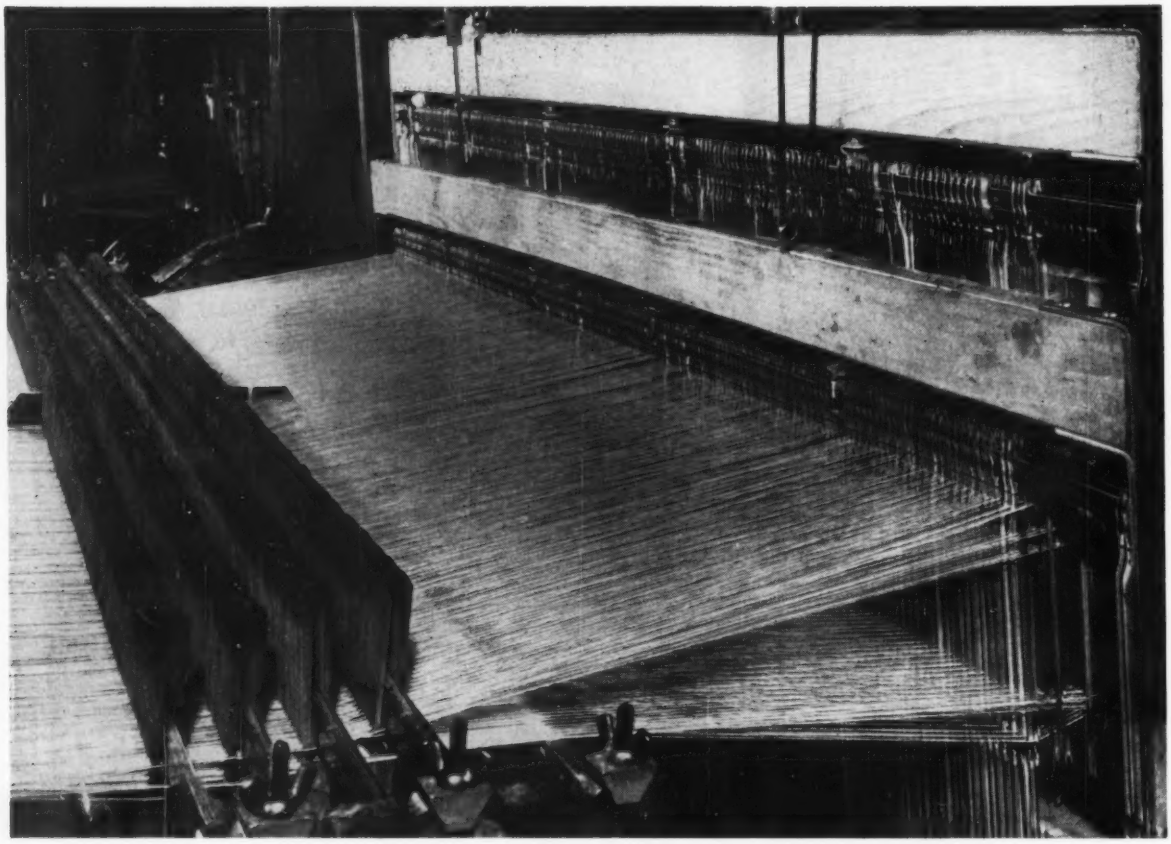
Complete plants



Each adds strength to the whole

Just as every strand of yarn, whether warp or filling, is important in making cloth of superior construction, so every one of the 17,500 Cone employees is an important part of the total organization.

It is through the combined skill of all employees that fibers are processed into strands of good yarn which fall into their proper places to form Cone fabrics of highest quality.

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FOR COTTON, STAPLE FIBRE AND WORSTED

Design and supply of complete spinning plants
based on latest experience in spinning and engineering
Spares for spinning machinery

We are manufacturing for cotton spinning mills in particular:
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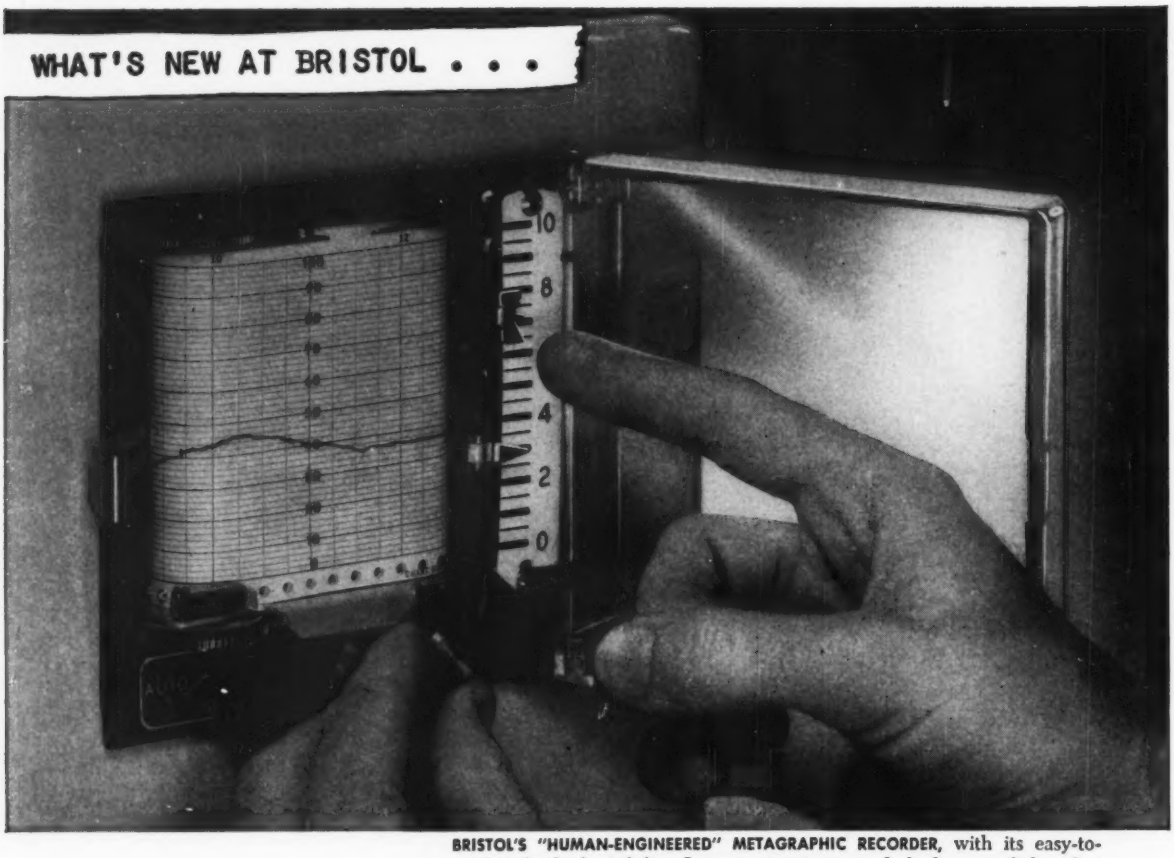

BRISTOL'S "HUMAN-ENGINEERED" METAGRAPHIC RECORDER, with its easy-to-read scale, high-visibility fluorescent pointers and shadow-proof door has earned the distinction of being the "biggest little instrument in the business."

Instrument men call Bristol's METAGRAPHIC Recorder

"...the biggest little instrument"

Sounds contradictory, but it's true. Take a look at one of our new METAGRAPHICS mounted on a panel board alongside of other instruments. The Bristol unit stands out – seems bigger than the rest – although chances are it's actually smaller (5" x 5½"). The answer is that the Bristol instruments have been "human-engineered", making them easy to read, and clearly visible at greater distances.

The air-operated METAGRAPHIC, which records pressure, temperature, vacuum, flow, differential pressure, and liquid level, offers these big advantages:

SIMPLICITY . . . fewer moving parts, fewer adjustments, and less service required. Range changes can be made in seconds. True plug-in service.

CONTINUOUS VALVE-POSITION INDICATION . . . separate from set-point indication, gives continuous data on control valve position and level of process operation. No switching is necessary in order to get reading.

CONTINUOUS OPERATION . . . complete unit can be retracted for inking pen, and for set-point and zero adjustment without disturbing record or control. Auto-manual switching is foolproof and "bumpless", without disturbing valve position.

Get the whole story on the "human-engineered" METAGRAPHICS – how they can help you get more accurate measurements, faster and easier. Write us today. The Bristol Company, 103 Bristol Road, Waterbury 20, Conn.

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POINTS THE WAY IN HUMAN-ENGINEERED INSTRUMENTATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

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Being Firm...

...Does Have Its Points!

The points when considering appropriate FRAME CONSTRUCTION built for the fabrics they were intended for, added up are;

1. STRENGTH AND RIGIDITY — To take any punishment high speed production inflicts.
2. LIGHTNESS IN WEIGHT — Provides ease of handling plus the strength required.
3. Constructed so that all wood parts are made from selected seasoned lumber free from knots; all metal parts being of rust resisting metal and designed for fool proof function of the frame.
4. Smooth face — no parts protruding — no rub, no cut.
5. Finger Tip controlled Heddle Bars of the finest tempered steel for quick release.

STEHEDCO FRAMES will always be the Frames for high speed production, because they were designed for it. There is a STEHEDCO FRAME constructed for the material you are weaving equipped with Stehedco patented Draw-tex Heddles.

Consult your nearest Stehedco or Southern Field Engineer for the information you require.

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WORLD FAMOUS TRADE MARKS OF THE
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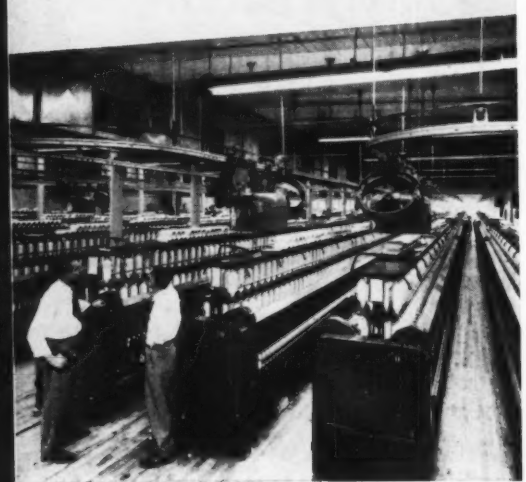
another satisfied user of AMERICAN MONORAIL AUTOMATIC CLEANING



TWO TYPES AVAILABLE

American MonoRail Automatic Cleaners can now be creel mounted — TRI-RAIL — or suspended from the the ceiling — MONO-Rail. Both are giving satisfactory service. Let your near-by representative give you the complete story.

WERTHAN BAG CORPORATION

IMPORTERS COTTON-BURLAP-PAPER BAGS MANUFACTURERS

BETTER BUILT BAGS

NASHVILLE 1, TENN.

November 9, 1953

Mr. J. P. Lawrence
The American MonoRail Company
13107 Athens Avenue
Cleveland 7, Ohio

Dear Mr. Lawrence

The last units shipped are in place and running, and I am very happy to report, cleaning very nicely. I realize that your company, was handicapped in developing this cleaner for the SG-1 Spinning, however there were two reasons instrumental in selecting your equipment. First, I felt that it was superior in its mechanical construction, and secondly, knowing your company as I do, I was certain that any trouble coming up after erection, would be corrected.

This has certainly proven true, and I can now say the cleaners are doing a very satisfactory job with practically no mechanical trouble to-date.

I would like to express my appreciation to your Chattanooga Office in their co-operation before and after this job was contracted for them.

The fact that you have a number of Southern Offices located at such strategic locations, was another point in your favor. I have found that a low cost long distance telephone call, will get a man here in a matter of hours.

Hoping that you will personally pay us another visit in the near future, I remain,

Yours very truly,

F. M. Paget, General Supt.
Werthan Bag Corporation

AMERICAN OVERHEAD HANDLING EQUIPMENT

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are made by

DUFFY SILK with the assistance

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HERR FLYERS

and HERR

CONICAL RINGS

You can easily adapt your present equipment for any textile fiber or blend with HERR Conical Rings. They prevent yarn breakage, give smoother, cleaner yarn, and permit heavier, more uniform doffs. You will have fewer ends down because these rings compensate for and equalize yarn tension variations. No rewicking required.

Specially designed lightweight HERR flyers that are perfectly balanced for accurate yarn control and minimum tension were instrumental in producing this special Helanca yarn in the Duffy Silk Company mill in Buffalo, N. Y.

Do what so many other quality-conscious mills have done — see how HERR equipment increases efficiency — and profits.

Ask for help on your problem.

Pease send us your literature.

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A great name for the best

Ciba

. . . and for the BEST of reasons

PRODUCTS OF CIBA

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VAT DYES

For more than half a century Ciba has played a leading part in pioneering the development and manufacture of vat dyes derived from anthraquinone.

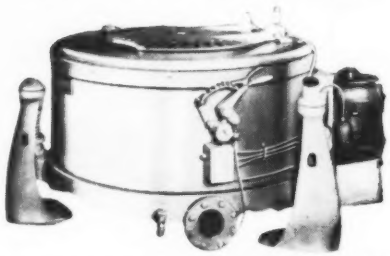
The benefits of scientific experience and achievement that emanate from the internationally-renowned research and manufacturing organization of Ciba were extended still further in the American market when the great, new vat dye plant at Toms River, New Jersey, was established.

At Toms River, Ciba is determined to bring further honor to the famous Cibanone name which will carry with it the assurance of high quality products accompanied by the most advanced technical services available anywhere. Thus will Ciba assist American dyers to achieve the results they seek to meet ever-increasing consumer demands for the highest fastness.

The name Cibanone is associated with vat dyes of the finest quality produced in Ciba's new plant at Toms River, New Jersey . . . the most modern and efficient installation of its kind.

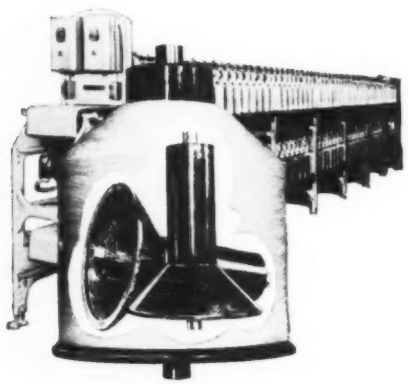
EVERY *Fletcher* MACHINE IS TOPS IN ITS FIELD

"WHIRLWIND" EXTRACTOR



The glass-smooth interior of the Fletcher "Whirlwind" extractor makes this versatile machine completely safe for all fabrics. Numerous outstanding operating features include: automatic hydraulic brake and timer; oversize motor to prevent overheating even under large loads; super-self balancing for safe operation. Several sizes available to fit all needs. Write for descriptive literature.

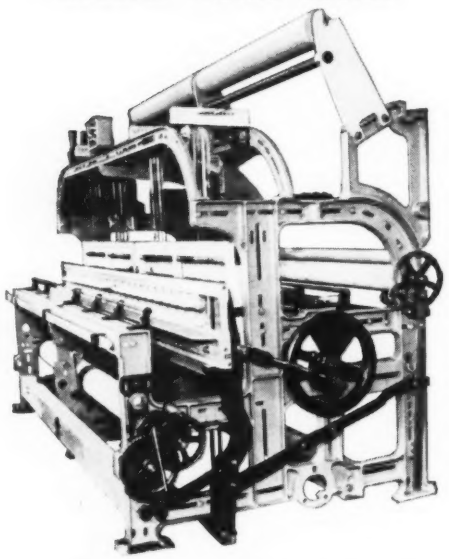
FLETCHER "KING SPOOL" TWISTER



Incorporating a completely new take-up package for overend delivery, without allowing the yarn to slough off, the "King-Spool" Twister is ideal for a wide variety of yarns, including low twist voile yarns and nylon, as well as high twist single and crepe, cable crepe, and combination yarn. The "King-Spool" features a fast traverse, eliminating overlaps and underwinds. It provides for a tail used in magazining.

For over a hundred years, Fletcher Works has been producing top quality machines for the textile industry. The "know-how" and experience which Fletcher has acquired during this period can provide valuable assistance to you. Why not call in a Fletcher engineer who will be glad to go over your particular problems and suggest ways in which they may be overcome . . . There's no obligation, of course.

NARROW FABRIC LOOMS



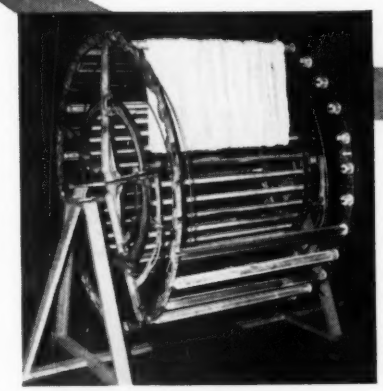
This semi-automatic, narrow fabric loom, one of Fletcher's latest developments provides for maximum production of top quality tape and ribbon. Its rugged construction permits it to operate safely at high speeds—an extremely versatile unit. For further information, request Bulletin 73.

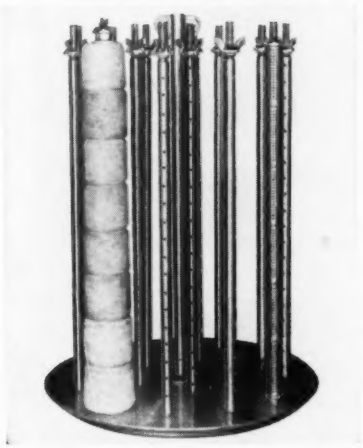
TEXTILE MACHINERY AMERICAN ASSOCIATION EXHIBITION ATLANTIC CITY APRIL 28-30 1954

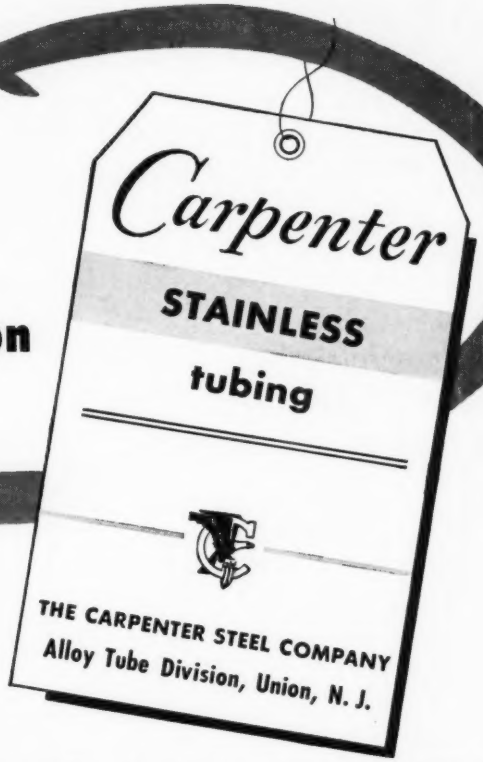
FLETCHER WORKS

223 GLENWOOD AVE. PHILADELPHIA 40, PA. ESTABLISHED-1850

Ticket to Trouble-Free* Textile Production







*Troubles resulting from rust marks, staining from drip-off, snagging from rough spindles, dye sticks, storage racks, etc. are ended—permanently—when you put Carpenter Stainless tubing to work in your plant.

Being stainless—they can't mark yarns or fabrics. They are smooth, stay smooth, can't snag yarns or pick fibres, are quickly and easily cleaned by just wiping. They are light and strong—are easy to handle, stand up to tough jobs. They are tough and abrasion resistant—when used for rolls, need no refinishing or recovering.

It all adds up to more production with fewer troubles and lower costs when you use Carpenter. For complete information and time-saving delivery, call your authorized Carpenter distributor (listed in classified telephone directories in principal cities) or write direct to:

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N.J.
Export Dept.: The Carpenter Steel Co., Port Washington, N.Y. "CARSTEELCO"

Carpenter

more than corrosion resistance

STAINLESS TUBING

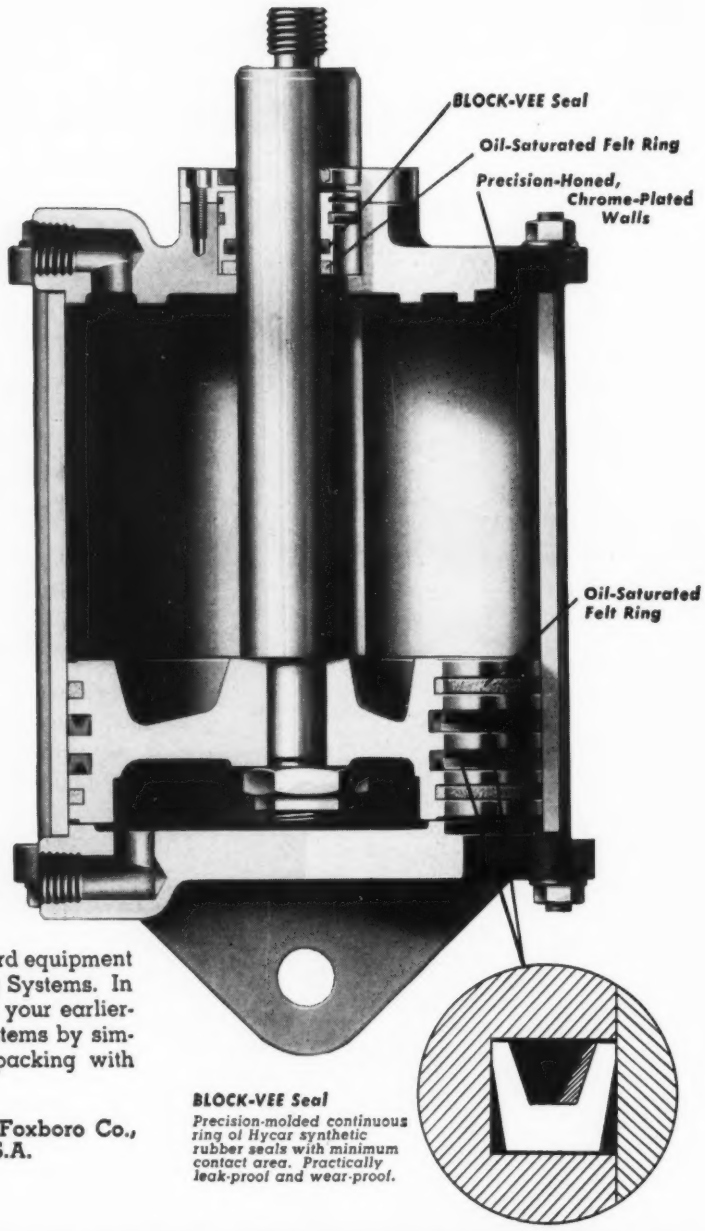
—guaranteed on every shipment

Stabiload... the only cylinder specifically designed for roll loading!

Ends stickiness and air leakage in pneumatic loading

Designed specifically for Foxboro Pneumatic Loading Systems, the new Foxboro STABILOAD Air Cylinder now makes possible more-accurate and more-uniform moisture extraction . . . safely permits higher nip pressure . . . than ever before could be obtained with loaded rolls.

Through use of the exclusive Block-Vee Piston Seal and precision-honed, chrome-plated cylinder wall, Stabiload Cylinders are so nearly friction-free that even fractional changes in air pressure settings give immediate, corresponding changes in roll nip pressure. You'll get substantial savings in maintenance because the Block-Vee Seal never needs attention or adjustment. And the virtual elimination of air-leakage gives substantial savings in compressed air.



STABILOAD Air Cylinders are standard equipment on all new Foxboro Pneumatic Loading Systems. In addition, you can importantly improve your earlier-model Foxboro Pneumatic Loading Systems by simple replacement of piston, rod and packing with STABILOAD components.

Write for detailed Bulletin 446. The Foxboro Co., 842 Neponset Ave., Foxboro, Mass., U.S.A.

BLOCK-VEE Seal

Precision-molded continuous ring of Hycar synthetic rubber seals with minimum contact area. Practically leak-proof and wear-proof.

FOXBORO
REG. U. S. PAT. OFF.

PNEUMATIC ROLL-LOADING

FACTORIES IN THE UNITED STATES, CANADA AND ENGLAND

Carniti

A.C.

A. Carniti & C. -

Officine Fonderie
Meccaniche Tessili
Oggionesi S. p. A.

Oggiono (Como)
Italia

NEW SPINNING AND TWISTING FRAMES

LESS FLOOR SPACE
MORE PRODUCTION
BETTER YARN
LARGE PACKAGE

Cotton Twisting Frame

MACHINES
for
PREPARING
SPINNING and
TWISTING of
COTTON
COMBED WOOL
CARDED WOOL and
COTTON WASTE

LEESONA® REPORTER

Waumbec Standardizes on Uniflex Spindles

Complete Switch-Over After Test Shows 33⅓% Increase in Spindle Speed

Among the best boosters for new Uniflex Roller Bearing Spindles are textile men who have tested this outstanding Universal advancement in their own plants, and beyond any doubt they've found a way to cut production costs.

To conduct a test, Waumbec Mills, Inc., of Manchester, N. H., decided on a trial installation of Uniflex Roller Bearing Spindles on their uptwisters. Following the test, Waumbec reported that uptwister speed was increased from 10,500 to 14,000 rpm — a rise of 33⅓%. Which means, of course, a sizable production increase in the same length of time from the same number of spindles, and the same amount of floor space.

Waumbec further stated that, together with the installation of Universal grease-sealed ball bearing idlers on their uptwisters, the Uniflex Spindles helped cut down oiling maintenance by 50% — since both these Universal units are lubricated only once a year. As a result, Waumbec Mills made a complete change-over to Uniflex Spindles on its uptwisters.

Other mills also have discovered the advantages of replacing obsolete spindles with Uniflex spindles. These include savings in power consumption (from 10% to 36% with comparable spindle speeds), more production without any increase in floor space requirements, and drastic reductions in maintenance. Replacing obsolete spindles with Uniflex spindles as the old ones wear out brings the same worthwhile economy, because every one starts cutting costs the moment it goes to work.

Some of the uptwisters at the Waumbec Mills, Incorporated, Manchester, N. H. These machines have now been completely modernized with Uniflex Roller Bearing Spindles.

Uniflex Savings Result From Greatly Advanced Design

In the Uniflex Spindle the high-speed flexible lower blade and unique bearing construction reduce bearing loads and vibration. Under satisfactory conditions these features permit safe spindle speeds up to 16,000 rpm, and cut spindle power consumption to an all-time low. Other performance-improving Uniflex features, as shown in the cut-a-way illustration, include:

C. Upper Bearing has short rollers which decrease the tendency of the blade to cramp during flexing.

D. Lower Bearing Journal has such a small diameter that its surface speed is always low. At equal spindle speeds, its surface speed is only half that of a lower journal with ¼ inch diameter. This reduced speed means reduced power consumption.

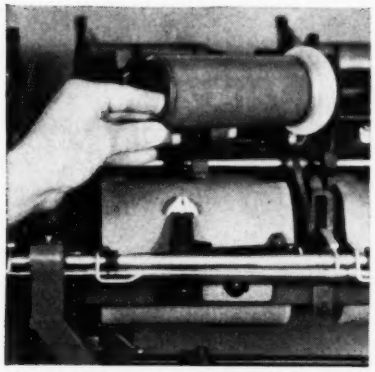
Advanced Unirail® Uptwister Features Assure Cleaner, Faster Yarn-Handling

Headless Package Arbor and Automatic Tailing Device Save Time, Guard Quality

Over-all performance in the Universal Unirail Uptwister reaches peak efficiency through revolutionary new features. Two of the most important of these are the Built-In Headless Package Arbor and the Automatic Tailing Device, which combine to cut yarn-handling time drastically, while safeguarding product quality.

E. Hardened Steel Ball takes the entire thrust load on a small contact area, requiring much less power than the larger cone bearings commonly used in other spindles.

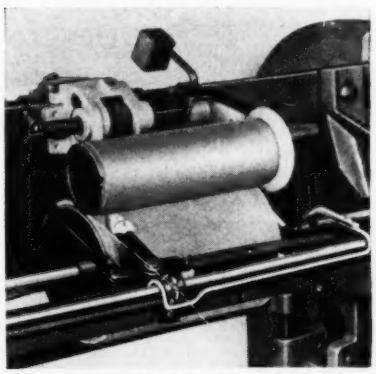
No free oil in the spindle — and consequently no yarn-contaminating oil splash — is another big Uniflex advantage. The porous bronze bushings (***A*** and ***B***) admit only enough oil to the bearings to form a thin film, and the needle-injected oil supply lasts a year. This new freedom from oil spray cuts down lint accumulation and greatly reduces the cleaning cycle.



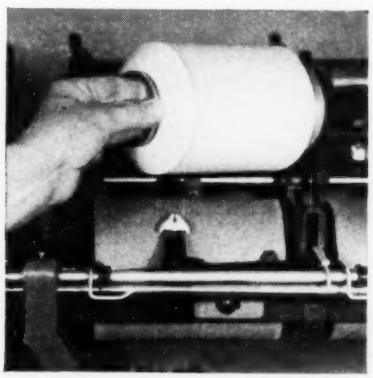
Headless Package Arbor on the Unirail Uptwister makes donning a faster, easier job. Swung out, the arbor contracts to take the tube. Swung into operating position, it expands within the tube to hold it firmly.

By eliminating the need of a separate tube mandrel, and the motions necessary for removing it, the Headless Package Arbor makes a much simpler, quicker job out of the donning operation. Then, with the Automatic Tailing Device, new ends are started in the shortest possible time. After starting the spindle, you trap the end in the leading end of the take-up tube in one quick, easy upward motion, by placing the yarn against the tailing guide wheel. Automatically the transfer tail is wound, the yarn drops out of the tailing wheel and the self-threading guide picks up the yarn — and you're in production.

Doffing time is shortened, thanks again to the Headless Package Arbor. Comparative tests prove that this feature reduces both donning and doffing time over 30% — with the additional big advantage that the operator doesn't have to touch the yarn while doffing; thereby assuring a cleaner, more waste-free product.



Automatic Tailing Device with self-threading guide cuts operator's handling time to a new money-saving low.



Yarn Is Untouched by operator when doffed from the Unirail's quick-doffing Headless Package Arbor.

23.3.16

TEXTILE MACHINERY AMERICAN EXHIBITION ASSOCIATION
ATLANTIC CITY APRIL 26-30 1954

UNIVERSAL WINDING COMPANY

P. O. Box 1605, Providence 1, Rhode Island

BOSTON, PHILADELPHIA, UTICA, CHARLOTTE, ATLANTA, LOS ANGELES; MONTREAL, HAMILTON, CANADA; MANCHESTER, ENGLAND; PARIS, FRANCE; BASLE, SWITZERLAND

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

INCREASE HORSEPOWER CAPACITY 40%

. . . and give you more use per dollar

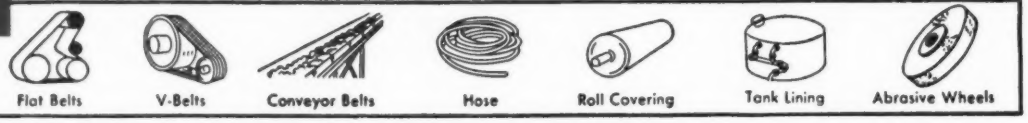
The combination of new synthetic fibers in the strength member of R/M Super-Power V-Belts assures greater resistance to shock loads, virtually no stretch, and practically eliminates matching problems. This, along with our straight side-walls, means better tensioning and grip, less slippage . . . more power delivered on the drive. Compared with regular V-belts you can handle approximately 40% greater load with the *same number* of R/M Super Power V-Belts or do an equal job with *fewer*.

Another plus . . . these V-belts are oil-proof, non-spark and heat-resistant. Send for Bulletin 6628. Ask the R/M distributor to show you how R/M Super-Power V-Belts will deliver "More Use per Dollar" on your drives . . . Condor V-Belts continue to be the standard for regular service.

RM

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Bowling Balls

For more information, write direct or use Reader Service post card.

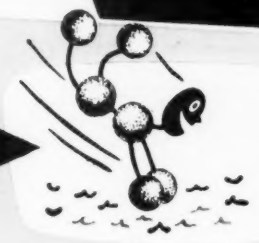
FOR FASTER PRODUCTION OF BETTER SANFORIZED FABRICS

INSIST ON

TWITCHELL® OILS

They're Balanced!

FASTER



Faster production through

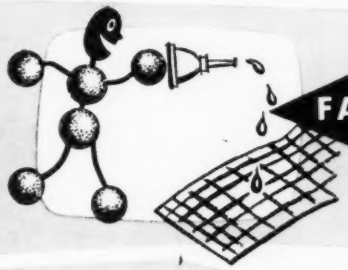
FAST REWETTING

Twitchell Oils assure maximum throughput per range because fabrics wet back rapidly and uniformly—particularly important for even shrinkage at high processing speeds. And, Twitchell Oils retain full effectiveness even when fabrics are stored for long periods.

Faster production through

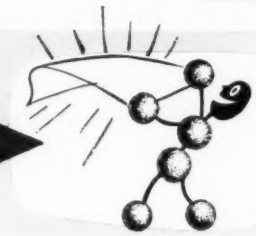
BETTER FIBER LUBRICATION

Fibers "adjust" easily, "slide" readily because Twitchell Oils impart superior lubricity. Speed-slowing, troublesome sticking at the shoes is avoided. Rejects or reruns due to fabric distortion are minimized... thus further assuring maximum production per range.



FASTER

BETTER



Better Sanforized fabrics through

FREEDOM FROM STAINING

Fabrics smell better—look better to the buyer because of the high stability of Twitchell Oils. Oxidation and rancidity are avoided. Treated fabrics possess maximum resistance to yellowing or staining with age... remain fresh and appealing longer.

Better Sanforized fabrics through

SOFTER HAND

Twitchell Oils give you the hand you want—the hand that appeals to buyers. This fourth property of softness permits a reduction in softening agents normally used. In many cases, maximum savings are achieved through complete elimination of other softeners.

BETTER

ORDER ENOUGH FOR A PLANT RUN, OR WRITE FOR FURTHER DETAILS!

Emery

Fatty Acids & Derivatives
Plastolein Plasticizers
Twitchell Oils, Emulsifiers

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

Export: 5035 RCA Bldg., New York 20, New York
New York • Philadelphia • Lowell, Mass. • Chicago • San Francisco
Warehouse stocks also in St. Louis, Buffalo, Baltimore and Los Angeles

EMERY INDUSTRIES, INC., Dept. W-2
Carew Tower, Cincinnati 2, Ohio
Please send me a copy of "Twitchell Oils for Cotton Finishing"

Name_____ Title_____

Company_____

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City_____ Zone_____ State_____

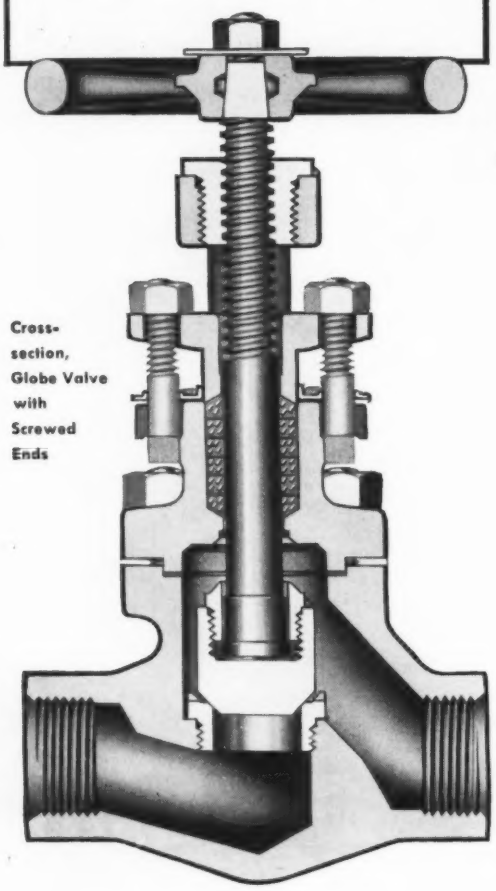
unmatched in dependability

CRANE

chlorine valves

Flanged Ends
Globe and Angle Patterns

Screwed Ends
Globe and Angle Patterns



Cross-section, Globe Valve with Screwed Ends

now regularly available with screwed ends *and* flanged ends

Take your choice of patterns in these Crane chlorine valves. They're *Crane Quality* throughout—designed exclusively for water-free chlorine gas or liquid up to 300° F.

In the cross-section you can see their strong, rugged construction—and the narrow bearing 45° taper disc and seat design that provides positive closure. Corrosion-resistant materials are used at all critical points. Disc, body seat ring and disc stem ring are durable Hastelloy "C." The stem and the gasket at the leak-proof bonnet joint are Monel. In the extra deep stuffing box there's laminated packing specially developed for chlorine service.

You're better equipped for chlorine control with Crane chlorine valves. Sizes ½ to 2-inch.

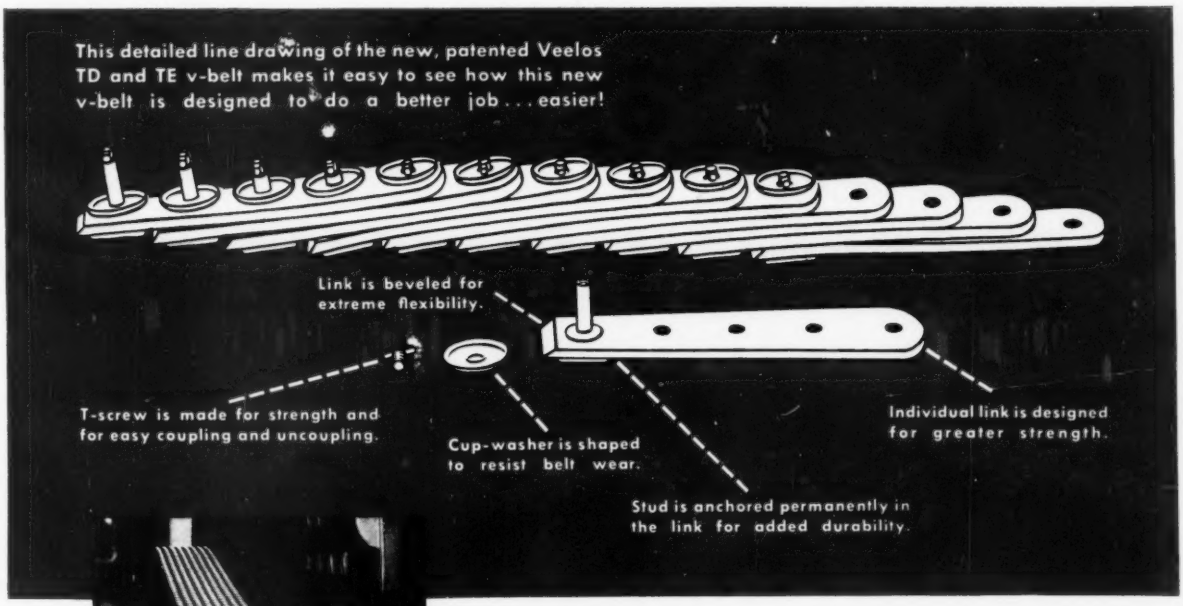
FULL FACTS are in new 4-page folder AD 1976. Write direct or ask your Crane Representative next time he calls.

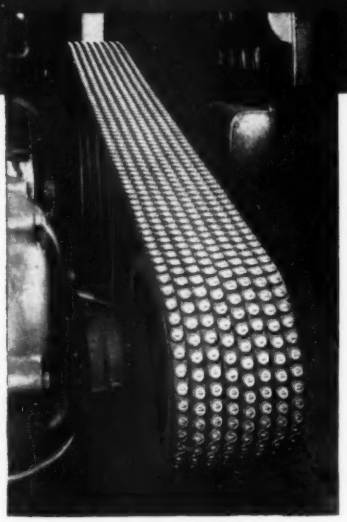
THE BETTER QUALITY... BIGGER VALUE LINE... IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING


This detailed line drawing of the new, patented Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job . . . easier!
Link is beveled for extreme flexibility.
T-screw is made for strength and for easy coupling and uncoupling.
Cup-washer is shaped to resist belt wear.
Stud is anchored permanently in the link for added durability.
Individual link is designed for greater strength.



New VEELOS

TD and TE Adjustable V-belt

So easy to couple *it installs in minutes*

So strong and durable *it lasts for years*

The new Veelos TD and TE adjustable v-belt is the successful development of a specific v-belt designed for a specific service—D and E drives.

This new Veelos TD and TE v-belt has these basic advantages . . .

It simplifies installation. Links are quickly joined by easy-to-use cup-washers and T-screws to make up individual belts. It's the easiest v-belt to couple and uncouple ever developed. And you don't need to waste time removing outboard bearings.

It lasts longer—is more flexible. New high-tensile strength link combined with new stud, cup-washer, and T-screw gives added durability. New link construction provides maximum flexibility for cooler, wear-resistant running.

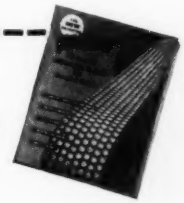
Get the complete story of this great new v-belt for D and E drives. Send coupon now for new 8-page illustrated catalog.

VEELOS
THE LINK
V-BELT

Veelos is known as Veelink outside the United States.

MANHEIM MANUFACTURING & BELTING CO.
611 Manbel St., Manheim, Pa.

Please send copy of your new Veelos TD and TE v-belt catalog.



Name .....

Company .....

Address .....

..... 2G1

ADJUSTABLE TO ANY LENGTH • ADAPTABLE TO ANY DRIVE

Armstrong's NO-7075 Aprons are SPECIALLY ENGINEERED

Newest Accotex Apron runs clean and smooth without top apron slippage

If you're spinning on the new long-draft frames with close-pin cradles, you can turn out better yarn more efficiently with the synthetic rubber apron that's specially engineered for these frames—Armstrong's NO-7075 Accotex® Apron.

NO-7075 aprons are really fitted to the job. The white inner face has a low coefficient of friction which won't permit buckling or jamming at the pin, yet is high enough to grip the drive roll firmly to assure smooth, regular drafting. This white inside runs clean, too. It doesn't collect loose fibers or build up hard-to-clean black deposits.

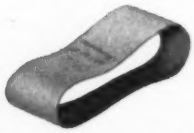
The black outer face, in addition to a high-friction surface that drives the top apron without slippage, is compounded to have excellent resistance to tearing and abrasion.

These two layers of rubber are vulcanized together around an unstretchable core of cotton cords then given a patented treatment which provides proper surface characteristics.

Any mill man who has used NO-7075 aprons will tell you how smoothly they run on frames equipped with close-pin cradles. A test in your mill will prove to you how well the NO-7075 performs. To set up a test, call your Armstrong man today or write to Armstrong Cork Company, Textile Products Department, 6402 Dauphin St., Lancaster, Penna. Available for export.

A complete line of top-quality aprons

FOR CLOSE-PIN CRADLES. The NO-7075 apron gives you smooth, clean operation on the latest type equipment.



FOR SINGLE-APRON SPINNING. The super-flexible NO-750 insures smooth slip-roll action needed for uniform yarn.

FOR DOUBLE-APRON SPINNING. The NO-700 Accotex is smooth and long wearing, first choice in hundreds of mills.

FOR CLOSE-PIN CRADLES

NO SLIPPAGE HERE
Black outer face has the right friction to keep the top apron running smoothly. This prevents the yarn irregularities which occur when aprons slip at points of contact.
RUNS CLEANER HERE
White inner face won't attract loose fibers, doesn't tend to build up excessive waste inside the apron.
RUNS SMOOTHER HERE
Carefully regulated surface friction of inner face allows smooth, sure transfer of power from driving roll to apron, yet prevents jamming or buckling at the pins.
Armstrong's
54MM149

ARMSTRONG'S ACCOTEX APRONS

On High-Speed Spindles or High-Inertia Card Drives . . .

TYPE D
Steel cage, metric series roller assembly with solid inner and outer race.

Steel cage, inch series, roller assembly, hardened or unhardened, no inner or outer race.

Rollway Bearings Reduce Maintenance Costs and Improve Work

Spindles, lickers in, card cylinders, feed rolls, cylinder shafts, all work better on anti-friction bearings, and all require a bearing specifically adapted to the space, speed, load, over-load, torque, temperature, lint and many other factors.

That's why Rollway *Solid Cylindrical* Roller Bearings with their wide range of standard types and sizes in steel-cage, inch and metric series, afford the best balance of low power consumption, uniform rotation and tension on yarns and fabrics, and longer continuous operation without servicing or replacement.

Let Our Engineers Work for You

Forty-five years of design, operating and manufacturing experience are at your service for the asking. No charge. No obligation. Every detail held in strict confidence. Just send us details of load, speed and operating requirements. Or ask for one of our engineering representatives to call.

Rollway Bearing Company, Inc.
Syracuse, N. Y.

TYPE PA
Steel cage, inch series, roller assembly with heavy duty planished sleeve.

TRU-ROL
Precision steel-cage, heavy-duty bearing with contoured guide lips, assuring maintained roller alignment. Free rolling approaches that of the most costly bronze-retainer bearing.

Right Angle Loading and Precision for Smoother, Longer Service

Rollway's right-angle loading, coupled with Rollway's right-angle precision of manufacture, assures true right-line rolling: No roller skew, no pinch-out, no end rub, no sliding friction, no cam action!

Write today for a detailed statement of the properties that make Rollway Bearings the *right* bearings for the textile industry.

Rollway Bearing Co., Inc.
Syracuse, N. Y.

SALES OFFICES

Syracuse — Milwaukee
Philadelphia — Los Angeles
Pittsburgh — Cleveland
Houston — Chicago
Detroit — Boston
Toronto

ROLLWAY® BEARINGS

Complete Line of Radial and Thrust Cylindrical Roller Bearings

A WOOLEN MANUFACTURER
ASKED FOR:

Bright violet checks

The dyehouse delivered a perfect job,
thanks to a new Sandoz dyestuff development

Problem:

Recently a high-grade woolen manufacturer wanted to put out a fabric with bright violet checks. The problem was that the fast-to-light violets then available did not have sufficient fastness to fulling, and would stain the white checks, while the fast-to-fulling violets did not have sufficient fastness to light.

Solution: a new Sandoz dyestuff

The problem was solved by Sandoz' timely announcement of Brilliant Alizarine Milling Violet FBL Pat. This is the first violet dyestuff which possesses the required brightness of shade, along with both fastness to light and fastness to fulling. In addition to these properties, it also has excellent fastness to carbonizing, decatizing, crocking, salt water, perspiration, and washing.

Brilliant Alizarine Milling Violet FBL Pat. is the newest of several fast-to-light colors which Sandoz has pioneered. By combining them with Brilliant Alizarine Milling Blue BL Pat., Blue 2RL Pat., Blue FGL Pat., or Brilliant Alizarine Milling Red FBL Pat., it is now possible to produce violets in any shade or depth with excellent fastness properties.

If you are faced with the problem of obtaining a special shade or fastness for any fabric, natural or synthetic, Sandoz Technical Service may be able to help you solve it.

Write to your nearest Sandoz branch office in Hudson, Mass.; Providence; Fairlawn, N. J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N.Y.

SANDOZ

SANDOZ

THINKS AHEAD WITH TEXTILES

created to provide Permanent

VISQUEEN®

For years ink just wouldn't stay on polyethylene. Expert printers tried many devices, but the ink chipped, cracked and rubbed off. "You can't print on poly" became a byword of the packaging industry.

Then chemists and engineers at VISKING developed and perfected **VISQUEEN "C"** to take and hold ink—to provide a printing surface for brilliant printing that stays and stays and stays.

There's no substitute for **VISQUEEN "C".** It's produced by a VISKING process. It loses none of its strength, toughness, durability because it's printable. So now you can have tough, durable polyethylene that takes ink and holds it!

Reasons why VISQUEEN is Superior for Flexible Packages

1 • *Tough* **VISQUEEN** gives complete protection—doesn't split, crack, shatter or run, won't curl, break or dry out under display lights.

2 • **VISQUEEN** *is readily adaptable* to high-speed packaging lines. Doesn't stick, doesn't break easily under tension, can be sealed with heat, sewn, taped, tied or stapled.

3 • **VISQUEEN** *uniformity* is unequalled. Yields more packages per pound of film.

4 • **VISQUEEN** *offers excellent product visibility* to promote impulse sales.

5 • **VISQUEEN** keeps inventory in saleable condition—increases shelf life—outlasts the product it protects.

6 • **VISQUEEN** packages stack well. No rigid containers or separator sheets needed.

7 • **VISQUEEN** locks out moisture or locks it in. Protects from dampness or drying out. Maintains moisture content you want for your product.

8 • **VISQUEEN** will not freeze—remains soft and pliable to more than 70 degrees below zero.

VISQUEEN IS AVAILABLE CLEAR AND IN A WIDE RANGE OF COLORS.

Ink Adhesion

This kind of printing stays on **VISQUEEN** *"C". Brand Identification won't rub off.*

Important: VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN film is produced by process of U. S. Patents No. 2461975 and 2632206. Only VISQUEEN has the benefit of research and technical experience of The Visking Corporation, pioneers in the development of pure polyethylene film.

VISQUEEN CONVERTERS ARE TOP EXPERTS IN PACKAGE DESIGN... ASK FOR THEIR HELP!

VisQueen® film... a product of

THE VISKING CORPORATION

World's Largest producers of polyethylene sheeting and tubing

Plastics Division, Terre Haute, Indiana

In Canada: Visking Limited, Lindsay, Ontario

Not only is **VISQUEEN** film a superior packaging material, but the converters who use it lead in design and manufacture, and are expert in solving tough packaging problems. They work with **VISQUEEN** technicians to give you their own superior skills and VISKING's acknowledged polyethylene leadership. If you desire, they can put factory specialists—able chemists and engineers—right into your plant to help you. This coupon will bring their assistance.

THE VISKING CORPORATION, BOX TW2-1410, Plastics Division, Terre Haute, Indiana

Please send me names of VISQUEEN converters serving my area.

Name_____ Company_____

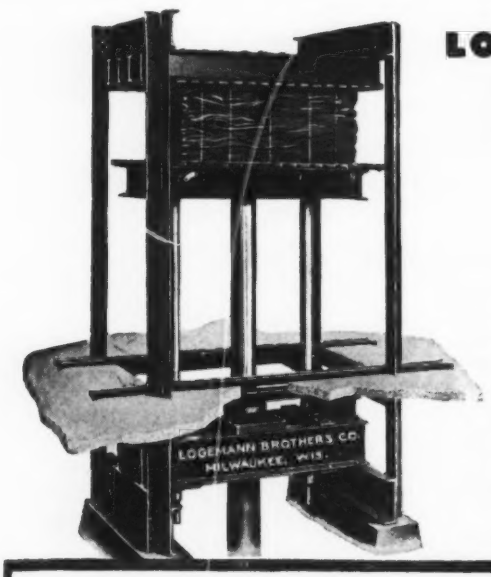
Address_____ City_____ Zone____ State_____

MAKE YOUR BALING A *Profitable* OPERATION *with a* LOGEMANN BALER

Tell Us Your Baling Problems

THAT's the best way to get the right answers to low-cost time-saving baling. During our sixty years of building balers for the textile industry we've solved many a baling problem for factory owners. Our engineers know how to make baling operations pay their own way in time and labor-savings, in speedier, more reliable handling of bales, in lower maintenance costs. Many Logemann balers have been in profitable operation since the turn of the century — evidence of the ruggedness, durability, and long service life of Logemann baling presses.

In the interest of better baling operations in your factory, find out what Logemann balers can do for you. Tell us what your specific problem is. We'll gladly show you how it can be answered in terms of better bales at lower costs and make a specific recommendation based on your requirements. Write for information today.



LOGEMANN BALING PRESSES

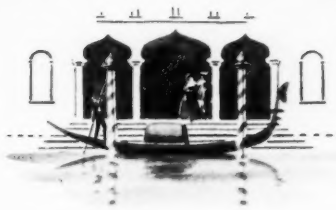
We have furnished many deep box Hydraulic Balers to the synthetic fiber industry where controlled bale weights and densities are most important. In every instance, Logemann Deep Box Hydraulic Balers have proved highly satisfactory.

Open balers for finished goods may be hydraulic or power-driven. Give platen dimensions required, maximum height of pile to be compressed, number of bales per hour, when requesting information on open balers.

Box balers for waste may be obtained in either the hydraulic or power-driven type. Mention the kind of waste to be baled, how much in how many hours, the preferred size or weight of bale when inquiring about box balers.

LOGEMANN BROTHERS CO.

3100 West Burleigh Street • • • Milwaukee 10, Wisconsin



YARN DYED FABRICS... the Royalty of Textiles

In past centuries, yarn dyed fabrics like that shown here were for the wealthy alone. Modern mass production methods bring them in reach of every pocketbook—*still* "the royalty of textiles".

As the world's largest package yarn dyers, Franklin Process has capacity to supply the best colors for your purpose—in any quantity, at competitive prices and in the shortest possible time. Ask our nearest plant for prices and delivery.

Franklin Process

COTTON YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD

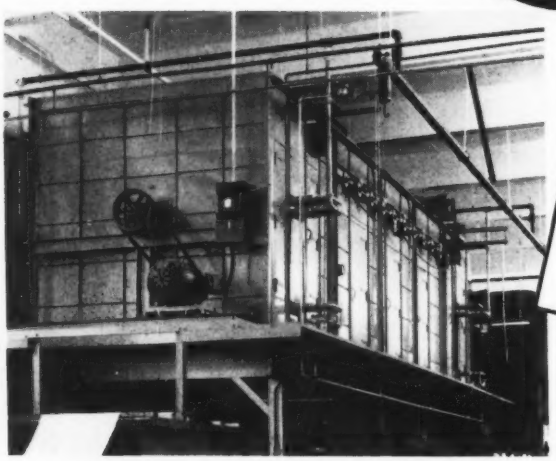
New York
Representatives
40 Worth Street

17th Century Italian Dress Fabric.
Museum of Art, R. I. School of Design.

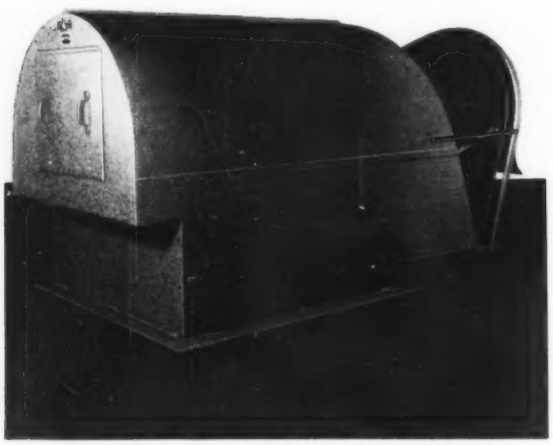
Providence
Philadelphia
Greenville
Chattanooga
Fingerville, S. C.

See A & G DRYING AND VENTILATING EQUIPMENT at

American Textile Machinery Exhibition



VAPOR DRYER: We are showing a gas fired unit of our well known roll type dryer with all of the latest improvements.



ROOF FAN: We are showing one of our ventilating units that can be mounted on the roof and throw the heat and vapor up and away from supply inlets.

The Choice of Leading Mills

The two A & G units illustrated herewith will be shown at the American Textile Machinery Exhibition at Atlantic City, April 26 through 30 — booth 78 on the main floor and booths 840-842 and 849-851 on the second floor.

This equipment has consistently been the choice of leading mills because it is tried and proven. It has been continuously developed and perfected over a long period of years.

Be sure to visit us and learn about the important features of this and other A & G equipment.

ANDREWS and GOODRICH, Inc.
336 Adams Street
Boston (Dorchester), Mass.

Southern Representatives
McSpadden and Scantland, Charlotte, N. C.

For perfection in high-gauge hosiery

you need the ultra-precision of Torrington fine-gauge Spring Beard Needles. Minute attention to every detail—the *exactly correct* bend of the beard, for example—is your assurance of top performance when you specify

TORRINGTON NEEDLES

SPRING BEARD • LATCH • LEADED AND PARTS

THE TORRINGTON COMPANY • Torrington, Conn., U.S.A.
Established 1866

Branches: New York · Philadelphia · Chicago · Boston
Greensboro, N. C. · St. Louis · Bedford, P.Q. · Toronto, Canada
Pacific Coast Representative: E. G. Paules, 1762 W. Vernon Ave., Los Angeles 37, Calif. Broadgate House, 7-10 Eldon St., London E.C. 2, England

The Chemstrand Corporation announces

3 big new

easier dyeability

improved mill processing

greater style-ability

plusses in Acrilan

After months of intensive technical research... Chemstrand has engineered important new characteristics into Acrilan . . . plusses that open up a whole new world of fabric design. Acrilan is now much more readily dyeable, which makes possible a wider variety of fabric styles. It has greater extensibility, which promises smooth, clean processing in the mill. It is not subject to fibrillation. These new properties have undergone thorough testing and evaluation, and the fiber is now ready for commercial production.

Greater dyeability... Acrilan can now be dyed in a full range of colors by a wide selection of dyestuffs, using standard dyeing techniques... *and* without the need for specialized equipment. Furthermore, because Acrilan can be union-dyed with wool in the piece, mills can develop new style constructions with greater economy. Men's suiting fabrics made with Acrilan will also step into the picture.

Improved mill processing . . . Extensibility in 30/1 yarns of Acrilan now averages 20% or better. Fiber extensibility averages 33% under standard conditions. Thus, higher yarn spin limits now become possible. Commercial limits of 36/1 on 3.0 denier staple have been successfully demonstrated. Acrilan also assures cleaner mill processing, with reduced card loading and reduced fly thoughout.

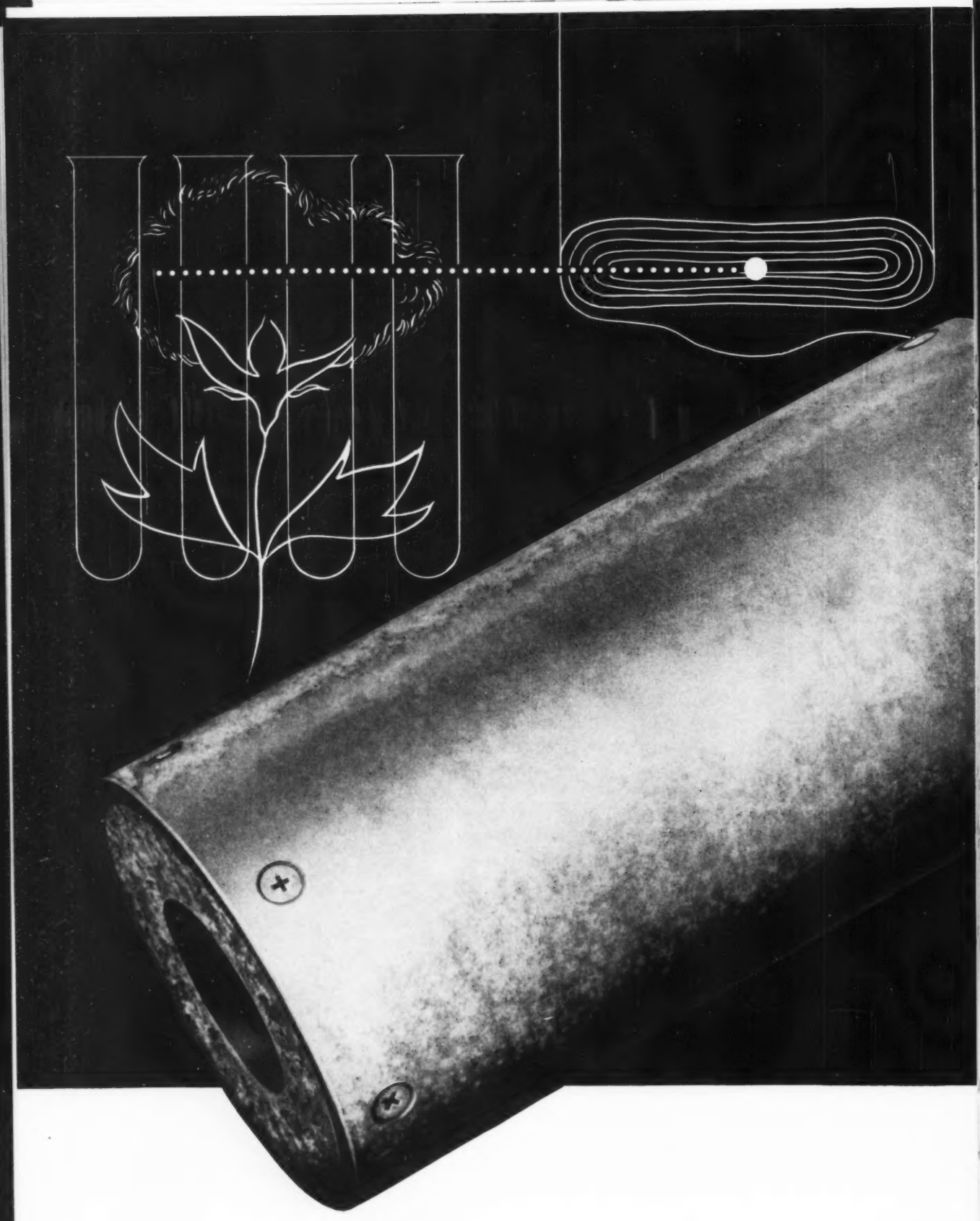
Other improved characteristics . . . Acrilan's improved extensibility promises many other functional advantages as well. Its *greater immediate elastic recovery* gives the final fabric greater shape-retention. Its *improved abrasion resistance* assures longer wearability. Its *reduced hairiness* makes possible smoother-faced fabrics.

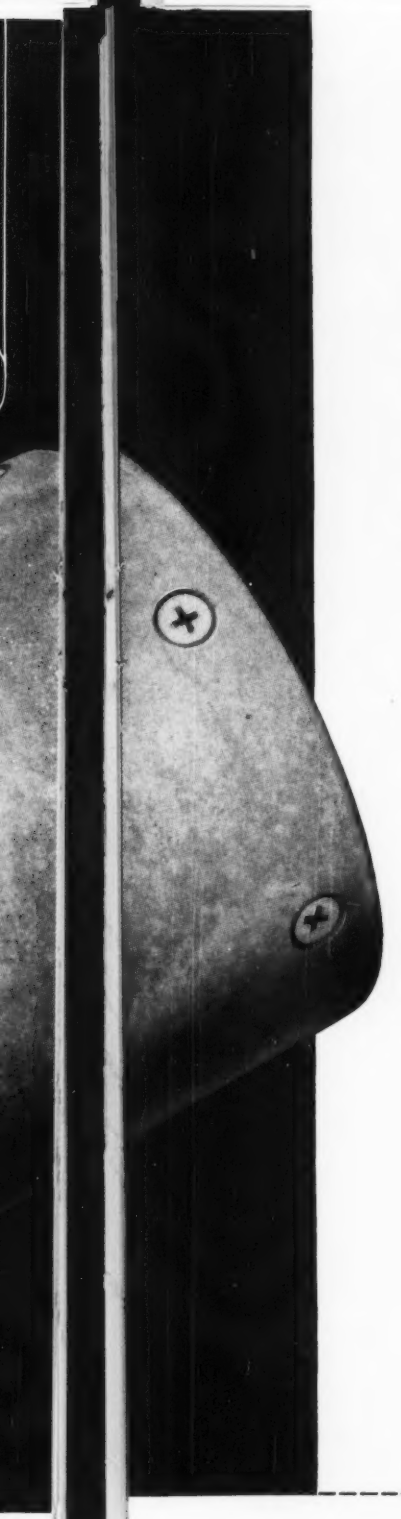
Other Acrilan advantages... In addition to these important advantages, Acrilan fiber retains its noteworthy hand, high dimensional stability, unusual bulking properties, warmth without weight, outstanding resistance to heat, moth-mildew and chemical-resistance, pleat and press retention and freedom from pilling.

New volume possibilities . . . With these many advantages, Acrilan now affords mills the opportunity to develop new fabrics which can run with continuity and in volume. And Acrilan advertising and promotion will continue to expand consumer markets through a continued and aggressive campaign designed to educate all of America. Make your own plans right now.

ACRILAN
ACRYLIC FIBER BY CHEMSTRAND

THE CHEMSTRAND CORPORATION, DECATUR, ALABAMA • NEW YORK OFFICE: EMPIRE STATE BLDG., NEW YORK 1, N. Y.





Here's what micarta® LAMINATED PLASTICS is doing to boost textile production

A leading textile mill wanted lighter, tougher lap rolls which would stay on the job longer. MICARTA® was the answer. Now the MICARTA lap rolls not only last months longer than the ordinary wooden rolls but their lighter weight permits up to three additional pounds of cotton to be wound on each roll. In addition, the MICARTA surface permits instant pick-up and wrinkle-free winding without the nuisance and expense of removing clinging bits of lap.

Here's what MICARTA can do for you

Light, tough, smooth-wearing MICARTA will pay off for you on products like spinning buckets, shuttles, bobbins, pirns, picker sticks and gears. On other textile applications, too, you can take advantage of its ability to withstand and "cushion" heavy vibration and shock . . . to reduce nerve-wracking noise. MICARTA means economy, less maintenance, more production.

Remember that Westinghouse-developed MICARTA is a thoroughly proved basic material. For the complete story on MICARTA call your nearest Westinghouse office or just fill out the coupon below. J-06542

YOU CAN BE SURE...IF IT'S Westinghouse

Westinghouse Electric Corporation • MICARTA Division, Trafford, Pa. • Attention: L. A. Pedley

micarta® is basic!

Sir: (Please check one)

☐ Please have your representative call

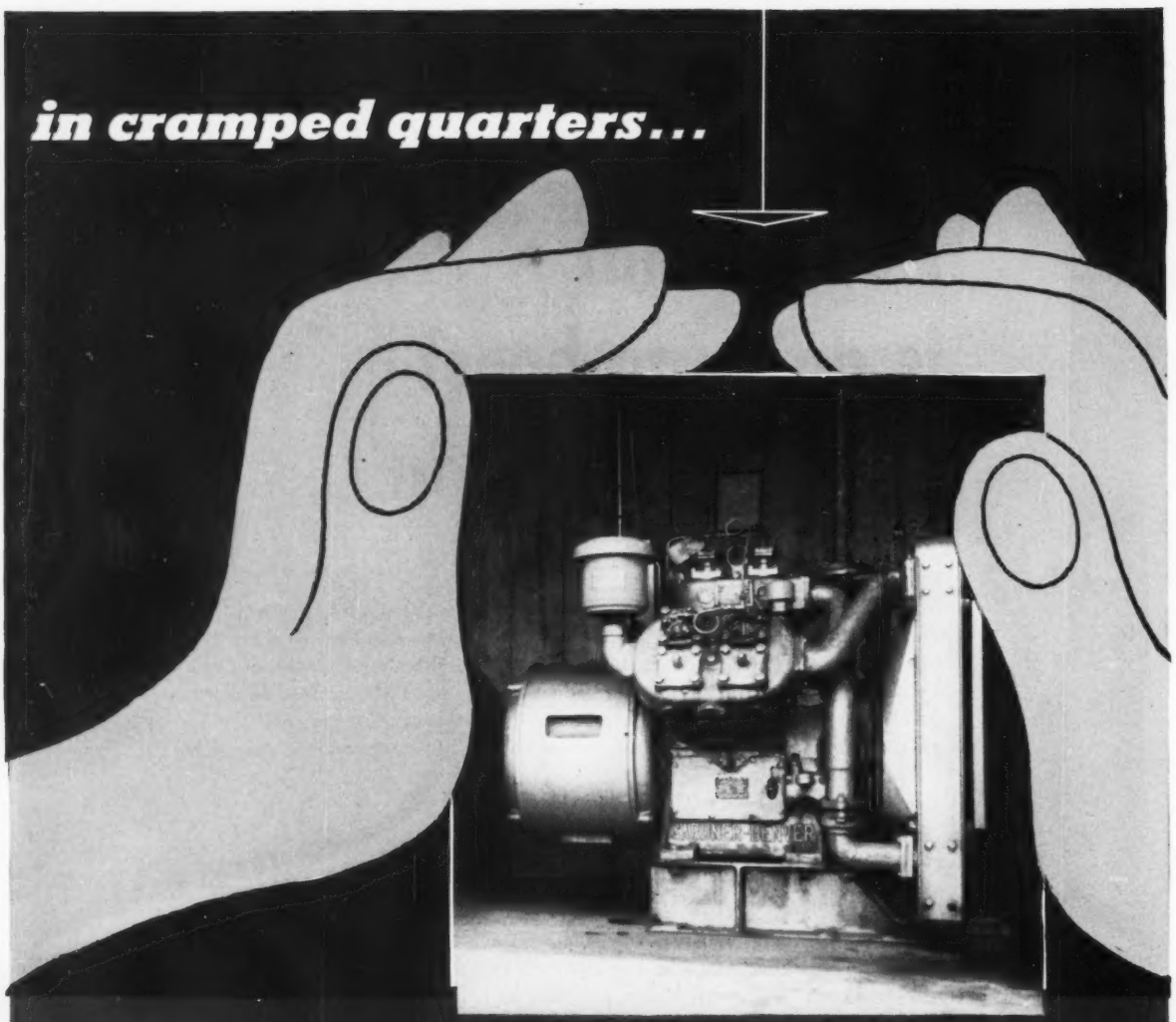
☐ Please send me the complete facts on MICARTA

Name_____ Company_____

Address_____

City_____ Zone____ State_____

in cramped quarters...



. . IT'S THE PACKAGED GARDNER-DENVER WB COMPRESSOR

compact and competent
easily and quickly installed

Seven sizes fully described in Bulletin WB-10. Write today.

GARDNER-DENVER

THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS
FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

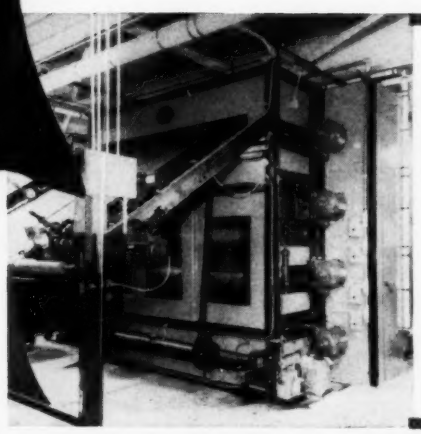
Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada) Ltd., 14 Curity Avenue, Toronto 13, Ontario

HUNTER *equipment safeguards quality at* Cyril Johnson

Strict quality control in every phase of manufacturing enables the Cyril Johnson Woolen Co. to produce the distinctive materials preferred by leading designers of men's fine outerwear.

Here, and in many other progressive mills where quality is so safely guarded, Hunter "plus production" equipment is used to finish a wide variety of ***woolens, cottons, blends*** and ***synthetics.***



CYRIL JOHNSON and other leading mills use the Hunter Model F Uniflow Tenter Dryer to produce more yardage, on a wide variety of fabrics, with lower costs for steam, labor and power. This efficient unit is designed and constructed for *faster, safer and more uniform* drying. Send for BULLETIN UTD-2.

plus production

✚ efficient operation of modern equipment
✚ less down time of equipment
✚ quick, easy repair... rapid parts delivery

JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ... IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

 For more information, write direct or use Reader Service post card.

HERE'S WHAT A LEADING MILL SAYS ABOUT THEIR

There's only ONE TAPER-LOCK

TAPER-LOCK sheaves run true! The patented Taper-Lock bushing grips the shaft for the full length of the bushing—holds with the firmness of a shrunk-on fit!

Every belt pulls its full share of the load. Grooves, machined on precision equipment, have identical pitch diameters, assuring equal belt tension.

Easy on—Easy off. Slip it on the shaft, line it up and tighten while sighting. In ease and speed of mounting and demounting you'll appreciate there is only ONE Taper-Lock.

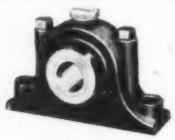
No flange, no collar, no protruding parts. Flush hub means safety.

Taper-Lock sheaves are available from distributors' stocks in complete range of sizes in A, B, C and D grooves.

DODGE MANUFACTURING CORPORATION
1400 UNION STREET, MISHAWAKA, INDIANA

DODGE
of Mishawaka, Ind.

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory-trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone book.



DODGE-TIMKEN PILLOW BLOCKS

TORQUE-ARM SPEED REDUCERS

ROLLING GRIP AND DIAMOND D FRICTION CLUTCHES

HERE'S WHAT A LEADING MILL SAYS ABOUT THEIR

Warner & Swasey-Sulzer Weaving Machines

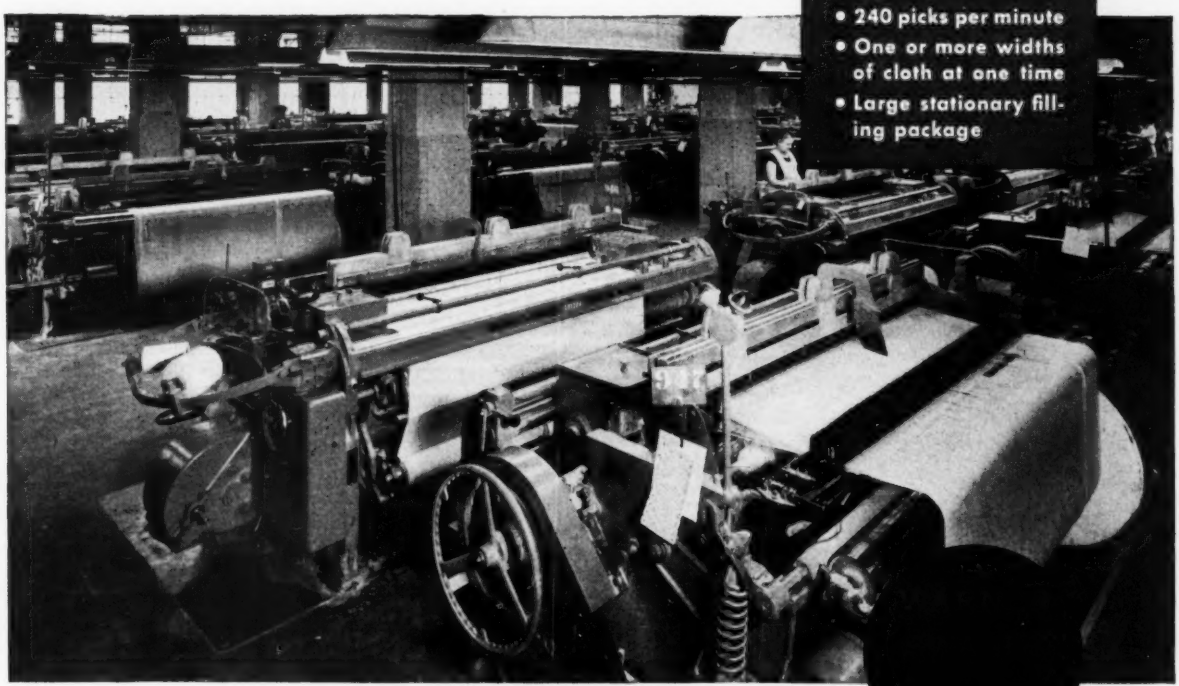
- "Production 1.8 to 2 times as much as from our previous looms."
- "Much less downtime from warp-end breaks."
- "Mending has been cut about 50%. We've completely eliminated filling kinks and double picks, wrong lifts and harness skips."
- "Quality is about 50% better."
- "Less waste—filling waste is practically eliminated."
- "Maintenance costs down . . . lubrication simplified."
- "Operators like machines very much. We'd have trouble taking weavers off the new machines."
- "Machines reduce over-all weaving cost."

Weaving worsteds, woolens, spun synthetics or blends, these revolutionary new machines can speed *your* production, improve quality of fabrics, and cut your costs. Call in your nearest Warner & Swasey Field Representative for the full details.

MODELS

M-2820 80″ reed
M-2860 95″ reed
M-2960 110″ reed

- 240 picks per minute
- One or more widths of cloth at one time
- Large stationary filling package



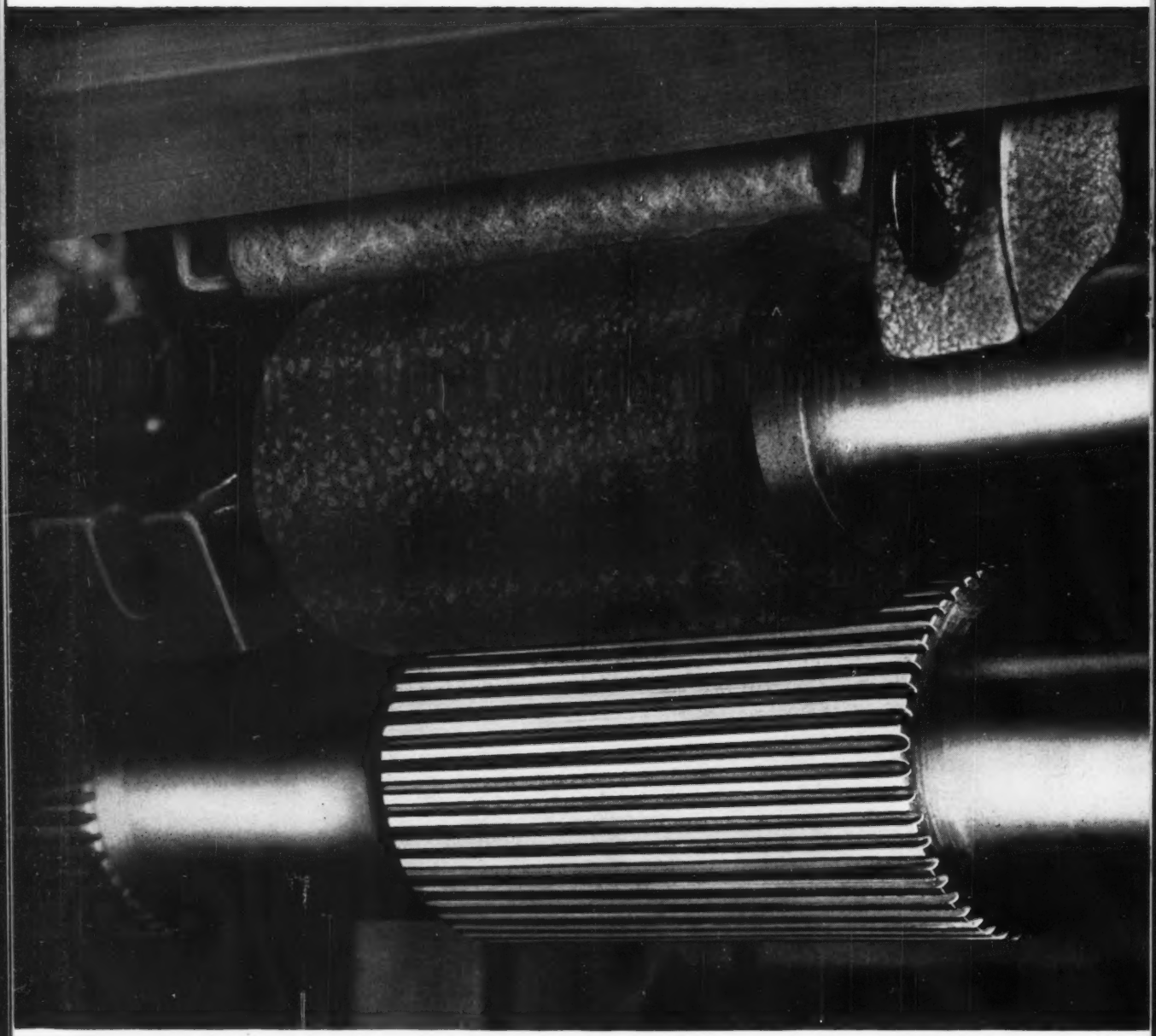
In this mill over a hundred Warner & Swasey-Sulzer Weaving Machines speed production of worsteds and woolens. Note how the low construction of the machines gives an unobstructed view of the entire weave room.

BRANCH OFFICES
61 Rivulet Street, North Uxbridge, Mass. • 6910 Market Street, Philadelphia, Pa.
Candler Building, Atlanta, Ga. • 1820 Browning Ave., Charlotte, N. C.

TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

FIND OUT BY



IBROCOL COTS ELIMINATE EYEBROWING PROBLEM

IBROCOL, newest discovery of Dayton's Textile Research Laboratory, gives Dayco Cots an almost human-like ability to select and pick up only the short staple fibres and tuck them well back on the clearer board. Long staple fibres are allowed to remain in the yarn, thus removing the major cause of eyebrowing.

Because of the chemical and mechanical action resulting from the addition of IBROCOL, just the right coefficient of friction is set up to completely control the eyebrowing problem. Dayco Cots on your equipment will also improve the quality of your yarn and give you valuable savings in time, material and reduction of waste. IBROCOL is another Dayton exclusive; no other cot on the market has this amazing ingredient. Contact your Dayco representative for complete details or mail the coupon on the opposite page today!

ACTUAL TEST

Discover These Cost Cutting Advantages

Test one frame of new Dayco Cots and you'll never go back to ordinary cots. Only Daycos have the new Ibrocol ingredient added that gives the surface just the right coefficient of friction to eliminate excessive eyebrowing.

The addition of Ibrocol retards slicking and glazing in the new Dayco Cot, thus fewer buffings are required. Also the clearer board needs cleaning less often because Dayco Cots pick up *only* the short staple fibres and transfer them well back under the clearer board, away from the eyebrowing position.

Note the difference in waste on the two clearer boards at the right. The top board, used with new Dayco Ibrocol Cots, shows much less waste and a minimum of eyebrowing. Here's actual proof of the ability of Dayco Cots to cut cost, save time and labor, wherever they are used.

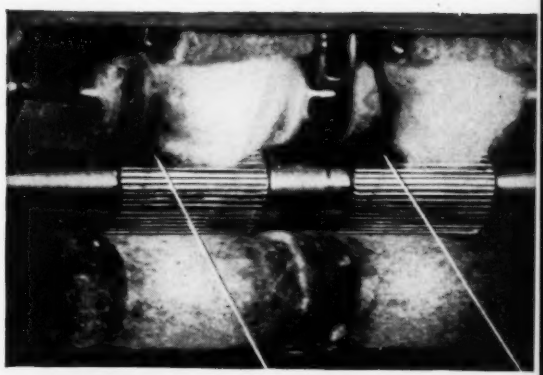
Draft Higher Quality Yarn

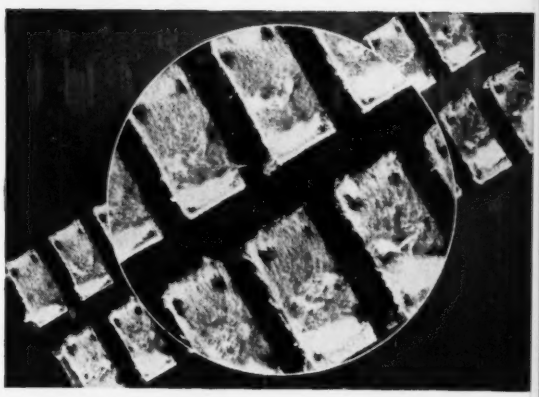
Dayco Cots leave the long staple fibres in the yarn, create fewer lap-ups and ends down, reduce waste and completely control eyebrowing. Result: a superior quality yarn from every Dayco-equipped frame.

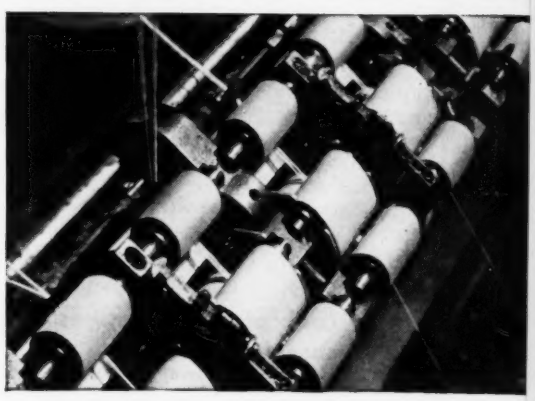
Dayco Cots guarantee better drafting on all types of frames using natural or synthetic fibres. So, for the finest quality yarn at lowest possible cost equip *your* frames with Dayco Cots. A test run will be all that's needed to convince you.

Make Your Own Money-Saving Test

Prove to yourself that Dayco IBROCOL Cots will save you time and labor, increase production and improve yarn quality. Test Dayco Cots right on the same frame with those you're using and make your own comparison. Clip and mail the coupon below to arrange a money-saving test.







Dayton Rubber

Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

Dayton Rubber Co., Textile Division, Woodside Bldg., Greenville, S. C.

(C) D.R. 1953

DAYTON RUBBER CO.
Dept. 342 Textile Division
Woodside Bldg., Greenville, S. C.

I'd like to know more about Dayco Ibrocol Cots—

☐ Send additional literature

☐ Arrange test run of Dayco Cots on my equipment

Name_____

Position_____

Firm_____

Address_____

City_____ Zone____ State_____

from the addition of IBROCOL, just the right coefficient

opposite page today!

Look at these features of the Model 604P5 Thermometer Controller

GOOD READABILITY:
indicates temperature on 4½" scale.

QUICK CONTROL CHECK:
readily visible red control pointer and black indicating pointer.

CONTROL AIR CHECK:
front-mounted gauge indicates air pressure to control valve.

VARIETY OF CONTROL:
direct or reverse acting pneumatic control —either on-off or proportional action.

SELECTION OF RANGES:
23 different temperature ranges, up to 1000°F., in Fahrenheit and Centigrade calibrations, for vapor and mercury bulb systems.

COMPACT DESIGN:
die cast aluminum case 11" x 11", 4" deep; gasketed black plastic cover; practically splashproof. Interchangeable flush or surface mounting on panels of any thickness.

SIMPLE SETTING:
external knob for adjusting control point.

(C) D.R. 1953

A new, low-cost temperature controller *from Honeywell*

MANY processes which now use manual control can utilize the advantages of automatic operation at unusually low cost—by employing the new Brown Pneumatic Thermometer Controller.

For the scores of ovens, vats, dryers and similar equipment which need only temperature indication and relatively simple control, this new instrument affords excellent control performance. It's fast, accurate . . . and simple in design. It takes so little space that it can fit readily into existing equipment or on panels.

Instrument and thermal system are complete in one package. The set point is easily adjusted by means of an external knob. The selection of control actions, ranges and types of thermometer bulbs covers literally hundreds of control applications throughout industry.

In spite of its low price, this controller is a precision-built instrument which incorporates many of the long-lasting, high-quality components used in other Honeywell products. And it's backed by Honeywell's nationwide service organization, strategically located in more than 90 principal cities of the United States and Canada.

Our local sales engineer will be glad to discuss how this new controller can be applied to your own temperature problems. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509, Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA: Write for your copy of new Bulletin 6401.**

MINNEAPOLIS **Honeywell**
BROWN INSTRUMENTS
First in Controls

ONYX OIL & CHEMICAL COMPANY

PROBLEM ***To prevent imbrittleness and loss of abrasion resistance in resin-treated fabric***

In achieving crush-resistant stabilized effects on various types of fabrics, the use of urea and melamine resins in such finishing invariably results also in the imbrittleness and loss of abrasion resistance in the fabric.

SOLUTION **REPELOTEX ST PROCESS**

in resin bath overcomes deterioration of physical properties

Easily formulated and applied and readily compatible with resin finishes, REPELOTEX ST PROCESS incorporated into the resin bath will greatly overcome any tendency toward imbrittling or loss of abrasion resistance. It will impart the highly desirable soft, worsted-like hand in place of the harsh, sandy resin hand.

Silicone-based REPELOTEX ST PROCESS offers extra-ordinary water repellency, permanent practically for the life of almost any fabric. REPELOTEX ST PROCESS improves sewability and strength properties, defies dry cleaning and laundry soaps, resists mark-off effect, staining and spotting. *All this at a cost lower or no more than ordinary non-siliconic treatments.* Ask for a sample today.

PROBLEM ***To eliminate dark selvedge, uneven dyeing on wide, rib-effect cotton***

Seconds were running quite high in a large dyeing operation involving cotton bedspreads, 72-90 inches wide, with a ribbed effect. Selvedges were dark and a great deal of uneveness in color due to the rib effect were causing unusual difficulties.

SOLUTION **REDOXYVAT**

Jig application of REDOXYVAT practically eliminates seconds

Using REDOXYVAT in a jig application—the jigs holding 250 gallons of water and the beams of cloth weighing 325 to 350 pounds — only a few pounds of the compound were necessary to correct the uneveness of color and the dark selvedge, with the result that losses in seconds became negligible.

REDOXYVAT is used to prolong the life of the dye bath, retarding too-rapid take-up of vat dyestuffs, eliminating streakiness and bronziness, and permitting darker and deeper shades; and provides a softer, fuller hand with cleaner and lighter effects. Added directly to the bath or to the dissolved colors, REDOXYVAT is easily applied. *Write for complete information.*

PROBLEM

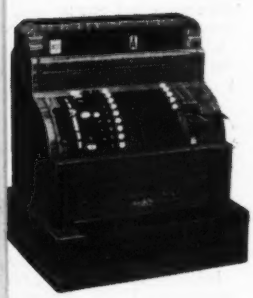
To reduce menders, shade variations in pre-setting for Dunn processing

A small hosiery mill using the Dunn method, plagued by the number of menders, installed a small, controlled temperature and moisture pre-setting cabinet. To their dismay, all goods processed through this cabinet were so unevenly set that as many as eight shade variations occurred in a single dye lot. The unsatisfactory pre-setting also caused many of the welts to develop distorted stitches during the wet processing operation.

SOLUTION

NYLONYX DS

Onyx-Dip system using NYLONYX DS gives very high percentage of firsts



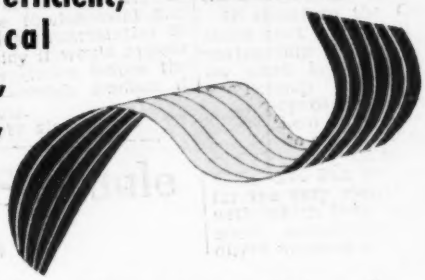
An ONYX-DIP pre-setting system using NYLONYX DS as the single ingredient corrected all the adverse conditions and resulted in an exceptionally high percentage of firsts. There were no shade variations and the appearance of the welts was that of very high quality merchandise.

Economical and entirely practical for all denier and gauge nylon stockings, full fashioned or seamless, the ONYX-DIP system obtains maximum shrinkage, removes sizing and oils, increases production.

The ONYX-DIP system, becoming increasingly popular in the hosiery industry, has been proven completely successful over the past several years. ***Find out what it can do for you, today.***

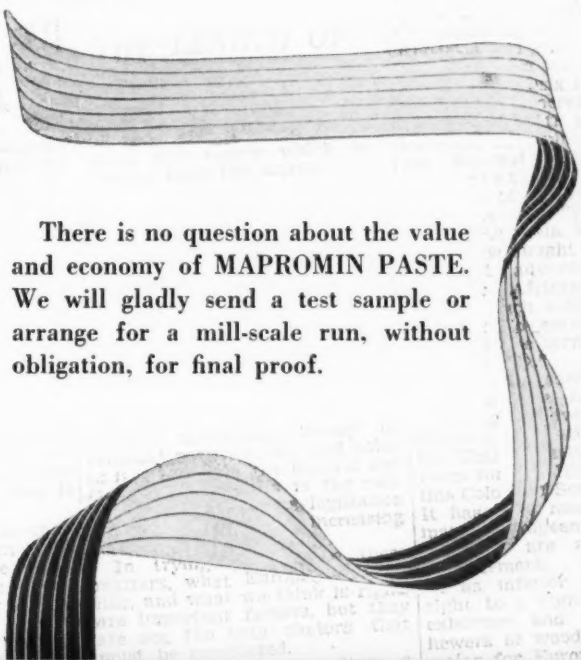
MAPROMIN PASTE

For more efficient, economical wetting, scouring, dyeing, foaming

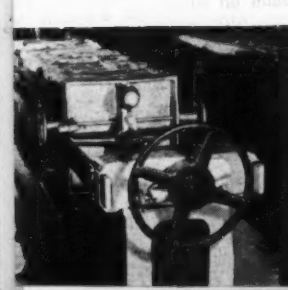


In processing cotton, rayon, acetate and other yarns and piece goods, MAPROMIN PASTE offers numerous advantages for use in wetting out, emulsifying, scouring and dyeing. Wherever soaps or detergents are used in such processing, MAPROMIN PASTE produces superior results at substantially less cost.

These results include: faster wetting action; better detergency; instant foaming; improved dispersing and suspending action; compatibility with hard water, phosphoric acid and acetic acid; easier handling than soap — no cooking or boiling; unusually fast and thorough rinsing; lower initial cost, greater final economy.



There is no question about the value and economy of MAPROMIN PASTE. We will gladly send a test sample or arrange for a mill-scale run, without obligation, for final proof.



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TEXTILE DIVISION WARREN & MORRIS STS., JERSEY CITY 2, N. J.

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Textile's steel formula, special tempering process and electronic control of manufacture give this hair-thin bit of wire an unusual degree of resiliency and strength.

Textile's extra strength means fewer stops . . . lower reneedling cost . . . more top grade fabric produced . . . more profit at the year's end.

TEXTILE MACHINE WORKS, READING, PENNA.

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SPRING-BEARD NEEDLES

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TEXTILE WORLD
Feb., 1954 • Vol. 104 - No. 2

1954 ANNUAL REVIEW & FORECAST SECTION

GENERAL OUTLOOK

1954 Expected To Be Neither Feast Nor Famine

✦ Production and profits started slow but are expected to pick up in the last half

✦ Trimming costs and changing products highlight mill activity

✦ Other factors brought over from 1953 include: national prosperity, cheap fiber, pressure for better depreciation rates

By P. M. THOMAS, Editor, TEXTILE WORLD

IN ITS BROAD OUTLINES, the textile picture for 1954 looks more normal than almost any year since the beginning of World War II. Stated another way, that means that other problems facing the industry are so minor that we can devote more time to worrying about business.

This time last year we had big things to think about: a new and untried Administration, Korea, and agitation for a raise in minimum pay.

These things cleared up, and we go into 1954 with these prospects:

Excess-profits taxes are off.

Prosperity will hold during the year.

Mill production and prices are down and likely will remain down until fall.

Mills' products are changing and probably will continue to change until there is a decided upturn in demand.

Fiber is relatively cheap and will remain so.

Something conceivably could be done about equipment depreciation write-off.

ACTIVITY. Fiber consumption for the first eight months of 1953 was up 8% over 1952, but the last four months of the year trimmed the gain to 4%. (See the Mill Production section of this report.) 1954 is expected to wind up somewhere near 8% below 1953, with the first half or more of the year slow and the latter part brisk.

Prices dropped too, putting pressure on mills to reduce manufacturing costs. That pressure is still on and will continue until the demand for textile products increases enough to boost prices again—probably not before fall.

Behind the over-all activity, change was seething in products made by mills. A number of mills changed part of their production from cotton to rayon, and others changed from rayon to cotton. Some cotton and rayon mills took on wool or blends of wool, while some wool mills took on cotton.

To keep production rolling, mills accepted small orders late in '53 that they would have turned down during the first half.

Two markets that changed drastically were automotive fabrics and ladies' hosiery.

Car makers turned more to nylon fabrics for higher-priced cars; and the market for cotton, paper, and plastic seat-cover fabrics shrank.

There was an increase in demand for women's seamless hosiery, and several mills were quickly equipped for greater production in this field.

Such changes in the market and in

activity of individual mills will continue at a rapid rate so long as a tight buyer's market remains.

PROSPERITY. A recent McGraw-Hill survey showed that 1953 was a record-breaking year for money spent on new industrial plant and equipment. What is more important now is that the survey also showed that 1954 will be only 8% below all-time-high 1953.

"Except for wartimes," the report on the survey states, "there has never been a period during our modern industrial development when capital expenditures were high that was not a period of general prosperity."

The 8% decline is not in expectation of a falling off of business; it comes from the fact that many plants have completed their defense-program expansion.

FIBER. The two most important factors in the fiber picture are: (1) the 1953 cotton crop (about 16.3-million bales), and (2) the increased production capacity of synthetic fibers.

With a large carry-over from the 1952 crop and the excess production of 1953, the supply of cotton now available will hold the price down until next year's restricted crop is in sight. Acreage quotas for this year are 25% less than the 1953 acreage. At the same rate of production, 1954 should come in with a 12- to 13-million-bale yield.

That's good news for rayon, which has felt a price pinch from cotton for the last two or three years.

Synthetic-fiber producers have big plans afoot. By the last quarter of 1955, capacity is expected to reach these figures, according to *Textile Organon*, (in millions of pounds):

	1953	1955
Rayon and acetate	1,642	1,713
Noncellulosic fibers	428	612
Total	2,070	2,325

DEPRECIATION. The rate at which the U. S. Treasury Dept. permits depreciation of capital investments in machinery and equipment received considerable attention in 1953, and efforts to shorten the depreciation period continue in 1954.

Complaints about the present setup are based on two conditions: (1) depreciation is allowed only for the purchase price of machinery and equipment and leaves a wide gap between that price and present replacement costs, and (2) the depreciation period is based on wear and tear of equipment and takes no consideration of obsolescence.

It is argued that if quicker tax write-off were permitted, mills could —and would—keep their equipment more up to date and productive.

If the national government turns thumbs down on shorter-term depreciation, look for state governments to start the trend towards a shorter-term write-off period.

MILL PRODUCTION

1953 Sets Record As Highest Peace-Time Year

- **Mills used 4% more fiber in 1953 than 1952**
- **But some branches of the industry were down**
- **1954 may be 8% lower than 1953 in fiber consumption**

By McGraw-Hill Dept. of Economics

MILL PRODUCTION IN 1953 was up from 1952. TEXTILE WORLD's mill-activity index, which compares total mill production by years, stood at 110, up almost 4% over 1952's 106. In millions of pounds of fiber consumed, the comparison was 6,675 (millions) in 1953 against 6,432 in 1952.

This volume put 1953 on the record as the fourth all-time high year and the highest peace-time year. Fiber consumption was greater only in 1942 (World War II) and 1950 and 1951 (Korea).

The first half of 1953 was generally prosperous for textile mills. Output was well above a year earlier. Order backlogs remained robust. Stocks, both at the mills and in the channels of distribution, were moderate. Cottons made gains at the expense of rayons. Wool-goods production recovered somewhat, and the progress of the new man-made fibers continued at a rapid pace.

At mid-year, unfilled orders turned down. Inventories increased. Cloth prices declined slowly from March to August and at a more rapid pace in the fall months. So the year ended more slowly than it began.

GENERAL 1953 ACTIVITY. Inventories for the textile industry as a whole rose during the first nine months of the year. A study prepared by Walter Storm, economist of Chicopee Mills, indicates that total stocks produced but not yet consumed reached a low point in the summer of 1952 and have been rising steadily since.

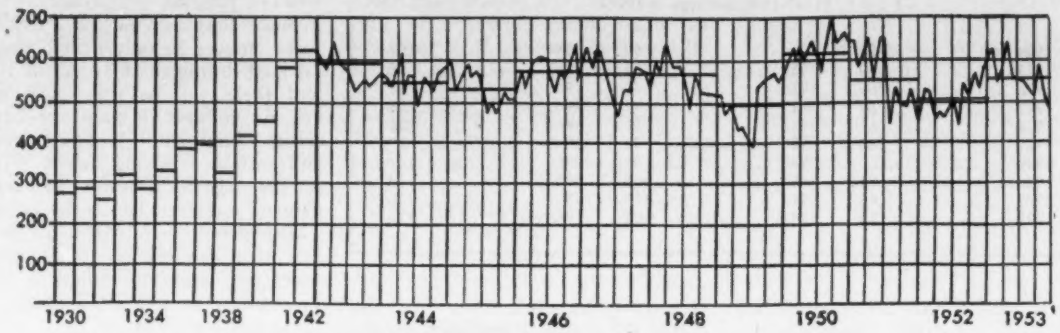
At the beginning of 1953, stocks had risen 26% above that low point. By November, 1953, stocks in the distribution channels had risen to a point two-thirds of the way up to the maximum inventory glut during the 1951-52 textile depression. Overproduction at this point was estimated at 0.81 month and leveling off. At this rate, output would have to be reduced 10% for eight months to reduce stocks to a normal level.

Orders on hand were at a high level as 1953 began, and unusually high new orders during the second quarter of the year shot total unfilled orders back up to a point above the previous peak reached in the fall of 1952—not far short of the pinnacles of the post-Korean boom.

Output continued at a rapid pace, about two-thirds of the way up from the bottom of the 1952 cycle to the high-post-Korean levels. This led to a steady rise in the stocks at mills, finishers, apparel manufacturers, dry-goods wholesalers, department stores, and so on.

Retail sales of textiles, meanwhile,

Trend of General Textile Activity



Total consumption (by years previous to 1943; monthly from 1943 on) of all fibers in millions of pounds; horizontal lines show yearly monthly averages

continued to be excellent, at a physical volume estimated at about 5% above 1952, the latter itself a good year.

Prices of cloth at the mill level, while generally slightly lower in the second quarter than in the first, were not falling rapidly enough or with enough conviction of trend for purchasing agents to withhold their buying unduly in the expectation of better bargains.

THE DROP-OFF. Commencing with July, textile mills started living off fat. New orders were decidedly on the slim side, and even in the vacation month of July many producers did not book orders equal to their reduced output.

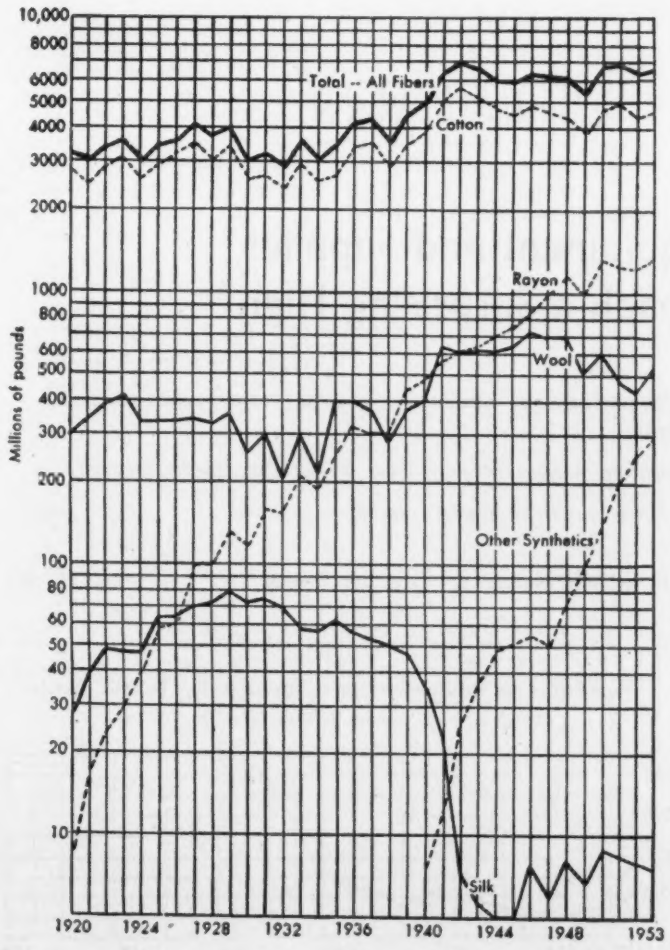
This condition continued and intensified during the fall months. Total unfilled orders were drawn down almost 40% by the end of the year. Mill stocks of cotton goods just about doubled during the year, and accumulation went on at a rapid pace in the latter half.

Inventories of apparel and dry goods wholesalers rose 9% over the beginning of the year. And estimated physical volume of stocks of 10 selected groups of textile products in department stores rose from 3% below the average for the last four years in January to 11% above the same average by October. These higher inventories were reflected in falling prices for textiles at wholesale.

Meanwhile, the flow of textiles to the ultimate consumer slowed down. Retail sales, after chalking up successively smaller margins over the same periods a year ago, commenced showing minus comparison in fall months.

1954 IN BRIEF. Total textile stocks, including all distribution chan-

U. S. Fiber Consumption



TEXTILE WORLD's Textile Mill Activity Index
(1947-1949 average = 100)

1924	50	1934	52	1944	101
1925	58	1935	57	1945	98
1926	61	1936	70	1946	107
1927	68	1937	72	1947	105
1928	61	1938	59	1948	105
1929	66	1939	74	1949	89
1930	50	1940	80	1950	112
1931	53	1941	106	1951	113
1932	48	1942	113	1952	106
1933	60	1943	109	1953 (est.)	110

nels as well as the mills, are moderately high and rising. Manufacturers' backlogs have been steadily pared down during the last half of 1953. Output still has not been cut as much as orders.

Therefore, lower prices will make production on marginal equipment uneconomical. Inactive spindles seem likely to increase in number throughout the first half of 1954. The cost of carrying increased inventories will curtail the hours of operation on the facilities remaining in operation.

What happens beyond the middle of 1954 is based to a large extent on decisions not yet made, both on the part of producers to reduce output and on the part of ultimate consumers to continue spending.

However, inasmuch as the general recession the economy may be entering has been the most widely heralded in our history, we may assume that manufacturers will be conservative and will not seriously overproduce.

Since consumer income is expected to be reduced by only a small amount (at least during the first half of 1954) and there will be some income-tax cut, no collapse in consumer buying seems imminent. Reduced output and sustained buying may very well set the stage for a healthy increase in demand sometime late in the summer. This possibility is substantiated by the fact that the textile cycle typically takes two years to complete (from the upturn in late 1952 to another upturn in late 1954.)

COTTON. Output of cotton broad-woven goods in January through June of 1953 totaled 5,218-million linear yards, up 12% from the 1952 doldrums but 6% below the 1951 post-Korean production bulge.

From July through September, an estimated 2,328-million yards were woven, only about 1% below the vigorous period

CONTINUED ON PAGE 198

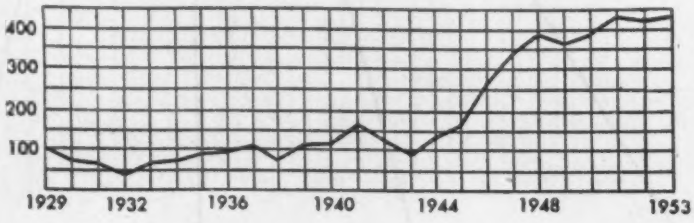
PURCHASES

Equipment and Supplies Reach a Surprising High

- **Mill purchases of machinery, equipment, and supplies set a new record**
- **Auxiliary equipment gains most, knitting machinery second**
- **1954 may set still another record**

By P. M. THOMAS, Editor, TEXTILE WORLD

Purchases of Equipment and Supplies by Textile Mills
Based on Dollar Volume in TW's Index, 1929 = 100



THE YEAR 1953 could be called the year of arguing with the record. All year long there were complaints about how bad business was. Yet more money was spent by mills for machinery, equipment, and supplies in 1953 than in any other year in history.

The annual TEXTILE WORLD survey of sales to mills showed that, of 111 machinery, equipment, and supplies manufacturers reporting, 55 had an increase in sales to mills in 1953 over 1952, 19 were the same as in 1952, and 37 were down.

The TEXTILE WORLD index of the dollar volume of mill purchases of machinery, equipment, and supplies in 1953 is 436 (based on 1929 = 100). This index is 3 above the 433 of 1951, the previous all-time high, and 8 above the 428 of 1952, which was the second all-time high.

The record since 1947 is:

1953—436
1952—428
1951—433
1950—399
1949—367
1948—394

However, business was spotty. In some lines of machinery, every manufacturer was well below its 1952 record. In other lines, practically every manufacturer was above its last year's

record, and some firms were in clover so far as sales volume was concerned. Some companies that make several types of equipment found some types moving at a fast clip and others completely stagnant.

Profits, in spite of high sales, were below par in many cases.

Only one category in the breakdown—spinning and weaving machinery—showed a decrease. The other four were up. Precentages up or down were:

Spinning and weaving	−2.5 (%)
Knitting machinery	+5.2
Finishing machinery	+4.0
Auxiliary equipment	+6.4
Supplies	+3.4

A few trends were evident from the mill-spending pattern of 1953. Some of them were:

Mill building, both new mills and major expansion of present buildings, has slowed down quite significantly.

Spinning and weaving mills seem to have about completed the major modernization that started soon after World War II and are now concentrating their expenditures on auxiliary equipment and on primary processing machinery that has been improved enough to make changing from the older models worth while.

Knitting mills, particularly circular, are still in the process of modernizing; and there has been a marked increase of interest in seamless nylon hosiery.

Finishing plants, perhaps in response to widespread improvements of machines and processes, are also being kept up to date.

1954 FORECASTS. If sales in 1954 turn out as forecast by companies participating in the survey, 1954 will be another record-breaking year. Based on figures confidently expected by 48 companies, the index for 1954 will be 444—up 8 above 1953's 436. Changes expected in 1954, as compared to 1953, are:

Spinning and weaving	+5.8 (%)
Knitting machinery	−7.5
Finishing machinery	same as 1953
Supplies	+3.4
Auxiliary equipment	+5.5

Of the 48 companies that gave their expectations in definite percentage figures, 21 expect an increase, 20 expect business to remain at about the 1953 level, and 7 expect a decrease.

In addition to these 48 firms, 18 others expressed opinions about 1954 business. Of these 18, 11 expect an increase, 1 expects business to remain about the same, and 6 look for a decrease.

Admittedly, all forecasts are no more than well-informed guesses. However, forecasts made last year in this section on the basis of last year's survey turned out to be surprisingly accurate. For example:

1. The survey indicated, and we wrote, that "1953 could be another record breaker" and that "the TEXTILE WORLD index for 1953 will be 436." That forecast was exactly correct, as this year's survey showed.

2. "Mill production for the year (1953) is expected to rise 2 to 3%." It rose 4%.

3. "Highest gains are expected by auxiliary-equipment manufacturers." That came through, too.

4. "Second highest gains are expected by manufacturers of spinning and weaving machinery." That one failed to come through.

In the face of such accuracy by last year's survey, we are not inclined to argue with indicators in this year's survey.

However, there are one or two factors in the economic picture that may affect 1954 textile business.

1. Mill production is expected to be down something like 8%. Since a good portion of mill spending for supplies and repair parts is in almost direct relation to running time, some of the expected increase in sales of these products may not materialize.

2. A recent McGraw-Hill survey shows that mills plan to spend 12% less for "new plant and equipment" in 1954 than in 1953.

It is possible, even likely, that this 12% drop, if it occurs, will be absorbed by reduced mill building. In 1953, there was a 23% drop in "new plant and equipment" expenditures but an over-all increase for machinery, equipment, and supplies.

That pattern may be repeated in 1954.

MACHINERY DEVELOPMENTS

Machinery Improvements Stick to Established Trends

✦ Larger packages, improved controls, increased speeds, and use of higher temperatures continue to highlight machinery developments

✦ Some of the major developments of the year were—

- **Coile circular-hosiery machine**
- **3-D printing-embossing**
- **SRRL and Super-Jet opening machines**
- **H-B-3 loom**

By THOMAS B. WINSTON, Assistant Editor, TEXTILE WORLD

THE TRENDS in textile-machinery manufacturing for some years have been to larger packages, improved controls, increased speeds, and better blending methods. In fairly recent months, the use of air, steam, and high temperatures has been incorporated in more and more machines.

The last major textile show was in Manchester, England, last fall. The trends in machinery development that showed up at Manchester, as reported by P. M. Thomas, editor of TEXTILE WORLD, were: balloon control for spinning frames, machines of all types adapted specifically to synthetic fibers, improvements on all types of winders and twisters, looms built for ever-increasing speeds, and high-temperature dyeing.

With the American Textile Machinery Exhibition coming up in

April, many of the latest developments in American machinery are being held back to be unveiled there. It is expected that machinery improvements shown there will follow the proven trends mentioned.

Highlights of Machinery Developments

Knitting

A new circular-hosiery machine that departs radically from conventional construction was brought out by Keller Machine Co. The Coile machine can knit 3½ doz. 168-needle argyle socks in 8 hrs. A pattern area of 130 steps by 100 racks is possible. Fine jack cylinders control the needles. Each design unit, which is a drum and its selectors, can be lifted from the machine to change the pattern.

The 60- and 66-gauge Reading 100 full-fashioned machine came on the market with success. It knits at 100 courses per minute and features redesigned parts. Fifteen- and 16-in. needle bars, as well as the original 14-in. needle bar, are now available on the machine.

Both H. Brinton and Supreme came out with 32-feed, four-color-striper circular machines. Both machines handle 128 yarn cones, and increased pattern scope is the main feature of both. Secondary features differentiate between the machines.

Scott & Williams came out with a 474-needle circular machine. The cylinder, plus the dial and take-up device, can be purchased separately to convert 400-needle to 474-needle machines.

Improved tricot machines were introduced by Whitin, Robert Reiner, and Alfred Hofmann. The Whitin machine knits at speeds above 500 courses per minute, and the machine has a Diehl drive and a self-correcting yarn let-off. The Mayer machine knits at 600 to 750 courses per minute, and the machine has a positive warp-drive mechanism and chain-link pattern wheels. Improvements in the Reiner RT-6 machine include lighter knitting elements, smoother motions, and redesigned guide-bar hangers.

News for the tricot knitter was the announcement that Celanese will give royalty-free licenses for its tricot stop motion. The Photo Bell Co. has agreed to make the device for licensees.

Dyeing and Finishing

The Bond dyeing machine was put on the market by Hussong-Walker-Davis Co. This machine operates at any speed between 20 and 120 yds. per min., depending on the fabric and dyestuff. Features are back and front injection plates, an effective filtering system, hydraulic lifts, and steam-chest heating units. Versatility in dyestuffs, flexibility on short runs, and speedy diffusion are claimed for the machine.

Improvements made in Du Pont's Barotor reduce the need for expensive loading equipment, and the bars, now fixed, have been reduced 20%.

A new slack washer was brought out by Proctor & Schwartz. This slack washer features self-compensating rolls and tapered squeeze rolls.

An interesting piece of auxiliary equipment was developed by Yarn Transfer Devices. The new machines transfer yarn from mill-wound paper tubes to dye-machine springs in one operation. After dyeing, the yarn is placed on shipping tubes without winding.

Burlington Engineering Co. came up with package-dyeing machines for open-mesh fabrics. Available either in high-pressure or atmosphere-pressure models, the marquisette machine handles up to 6,000 yds. of 60-in. goods, the tricot machine 92-in. fabrics. Operating temperature is up to 240° F.; pumping capacity is 1,000 gals. per min.; timers and temperature controllers are used.

In finishing, the Vapojet dryer was brought out by James Hunter Machine Co. (under license from Julian Dungler, Basle, Switzerland). This dryer impinges superheated steam at high velocity on both sides of the fabric to give a high drying speed. Heat is maintained at 300° F.

Special equipment and inks for the simultaneous printing and embossing of cellulosic fabrics were introduced in the U. S. by Metro Dyestuffs Corp. and F. A. Ringler Corp. The inks and machine were developed by Dornbusch Co. The 3-D effect can be applied in a wide range of color-and-pattern combinations.

Yarn Manufacture

Two machines that spin yarn directly from filament tow were developed in 1953. One, developed by Société de Constructions Mécaniques de Stains, spins 9s to 105s (cotton system) from nonplastic filament tow between 2,000- and 8,000-den. tow. The other machine, made by Johann Jacob Rieter & Co., spins a usual range of 20s to 60s (cotton system) from 1,000- to 6,000-den. tow; drafts of 4 to 60 are possible.

A tow stapler was developed by Turbo Machine Co. The machine makes crimped sliver with controlled staple lengths.

Whitin Machine Works brought out its Superdraft roving frame for worsted, synthetic, and blended fibers. The roving frame handles fiber lengths from 2 to 7 ins. The feature of these frames is the 30° angle of the inclined roll stand.

The Positube, a coiler for drawing frames on synthetics and wool-and-synthetics blends, was brought out by Saco-Lowell Shops. The Positube has no coiler tube, and it was designed to reduce the static problem. It can be interchanged with the conventional coiler assembly.

A new ring spinning frame was developed by Textile Equipment Corp. (W. D. Dodenhoff Co.). The frame provides for a drafting adjustment for staple length to 2¾ ins., with a draft range of 10 to 60. Twist range is from 10 to 80. Gauges: 3, 3½, 4, and 4½ ins. Top rolls are spring weighted, lubrication is continuous, and umbrella creel is used.

A direct spinning machine for cotton was introduced by Joseph Pfenningsberg & Co. The machine spins yarn directly from drawing sliver. The drafting system is set at an angle of 55°, and drafts up to 130 are possible.

New opening equipment was one of the significant developments of the year. The SRRL opener was brought out by Carolina Machinery Co. One mill using the SRRL opener reported an annual saving of $22,400 a year on cotton alone. Processing and the finished yarn are reported to be substantially improved. The working elements of the opener are five saw cylinders and five doffer cylinders.

The Lummus Super-Jet cleaner was put on the market by Aldrich Machine Works. This cleaner uses air streams to remove more trash and less good cotton. Yarn processing and ends down are reported to be improved.

The Shirley opener, developed by the Shirley Institute, is said to remove 66% trash at 2% lint loss. Features of this opener are a 15-in. lickerin-type beater, no grid bars, pneumatic stripping, and automatic waste removal.

A new opener and new picker section have been developed by Saco-Lowell Shops, but these machines have not been put on the market yet. The Gyrostatic opener is reported to have no grid bar; opening is done with revolving, wire-covered rolls and centrifugal forces.

A complete blending line for synthetic fibers was introduced by Platt Bros. Ltd. A production line would consist of four lattice openers, one blending machine, two intensive openers, and 36 lap converters. Production of this line is reported to be 700 lbs. per hr. Air stripping and electric-

eye stock-level controls are features of the line.

Warp Preparation and Weaving

The H-B-3 loom was brought out by Hunt Loom & Machine Co. Reports from Borden Mills, which has the first installation, indicate that this loom strikes at the heart of some major cloth-weaving problems. A feature of the H-B-3 loom is a new electric clutch and brake (made by Warner Electric Brake & Clutch Co.) that operate from a push button on the front arch of the loom. The loom stops within 1 in. of a given position on a warp break. To position the lay, the loom is turned over one pick at a time, controlled by the "inch" position of the push button. The electric brake operates within 1/400 sec.

Each loom is equipped with a humidity duct connected to a central control station. The humidity in the weave room is drawn through the warp at the drop wires, and the looms are running efficiently with a 62% weave-room humidity.

Other features are: no oil is used for lubrication, grease is used only in sealed antifriction bearings, and nylon gears and rolls and oil-impregnated bushings are used.

Two new filling-mixing looms were introduced by Crompton & Knowles Loom Works. The new looms contain a small number of moving parts and will weave any of the conventional worsted or synthetic-fiber fabrics up to 72 ins. wide.

New features of the looms are new patented binders at both ends to control shuttle boxing; a scissor-type thread cutter at the eye of the shuttle and a temple thread cutter reduce jerkbacks; the rotary magazine holds 22 bobbins; and the harness can be selected from Knowles head, dobby, or end-cam mechanism. The end cams are available to give four, five, or six picks to the round.

The shuttleless narrow-fabric loom developed by Disco Industries (new address: 141 Logan Ave., Jersey City, N. J.) is expected to be ready for mill installations by spring. This loom is said to operate at 2,000 ppm. and weave ribbons and tapes up to 4 ins. wide. A needle with an eye transports the filling.

A cooker-homogenizer for preparing size was brought out by Norcross Corp.

MILL PROCESSES

Present Range of Fibers Broadens Processing Approach

✦ Mills experimenting with or running fibers new to them stimulate processing changes

✦ Improvements come to nearly all processes in every manufacturing system

✦ Some mills aim at better quality, others at higher production

By JAMES H. KENNEDY, Managing Editor, TEXTILE WORLD

THE DAY OF THE all-fiber mill has not arrived yet—but it isn't far away. Mills that have never run anything except cotton are looking at synthetics and wool. Wool mills continue to dabble or plunge into synthetics. And some of the all-synthetics mills have often wished that they'd stayed with natural fibers—or blends at least.

What does this activity mean?

It means that now, more than ever before, mills must be acquainted with all fibers and all processing systems. That's why this Mill Processes section is broken down by processes rather than by fiber systems.

OPENING. Cotton men are realizing that some of their processing troubles aren't their fault but are caused by overdrying and overginning of cotton. Pressure on ginners is reducing such fiber damage, and spinner-breeder-ginner cooperation is increasing.

More feeders are being used in opening rooms, and production rates are being lowered to insure separation of the stock into small bunches that can be cleaned better. Small cleaners are being tried with each feeder in an effort to reduce the number of cleaning machines later in the line.

The conventional feed table may be replaced by a pipe with intakes from each feeder. But proponents of the theory that pipes mean tangling and neps will frown on the idea of adding pipes where not absolutely necessary.

Controlled air currents and centrifugal separation are being used to advantage in several openers and cleaners on the market. One of the newer openers, the SRRL, is being used to process a million bales a year; so its acceptance is wide. Substantial dollar savings have been reported by mills using this opener; and the companion SRRL cleaner, now in the development stage, is awaited by users of the opener.

The Super-Jet cleaner is gaining wider acceptance, and interest continues high in the low-production Shirley opener that will be available this year. With the trend toward lower production and higher quality in opening and cleaning, the Shirley unit may find a place in U. S. mills that would ordinarily scoff at 400 lbs. per hr.

Dust houses are on the way out as return-air filters become standard equipment in modern mills.

The new opening line for synthetics introduced by Platt at the Manchester Show appeals to the mill men who have long felt that to adapt cotton-system equipment to synthetics is unnecessarily cumbersome.

Interest in opening continues high, and 1954 will see a settling down and acceptance of some of the many ideas presented in 1953.

BLENDING. Automatic blending is the byword for all fibers. In wool mills, there is great interest in mechanical methods of laying a sandwich blend. The elimination of manual

handling here will make the chances of human errors that much less.

Just as blending by weight for synthetics was being almost universally accepted, the British came along with blending by volume. The claim is that opening is so complete that blending by volume can be accomplished accurately. U. S. mill men are waiting for mill tests on this principle.

The worsted people still haven't decided on the best place to blend. Each method—carding and pin drafting, recombing, mixer gilling, and converting—has peculiar advantages that make it suitable for one mill and completely unsatisfactory for another.

There is still no good way to measure blend uniformity. With the ever-increasing importance of blends, the need increases for such a method.

PICKING. Fiber damage and neps traced to overpicking are forcing gentler action in this process. Both the number and the severity of operations are being reduced. The trend with cotton is toward two beater sections, Kirschner beaters, and reduced beater speeds.

Installation of Kirschner beaters, already widely accepted for synthetics, will put cotton mills in a better position to handle several fibers.

No radical improvements are foreseen for picking equipment. Pneumatic lap racks are now common. Larger laps and more automatic doffing are in the offing. Lap conveyors will also be used more, but automatic unloading at the card is still too complicated for small mills. For a large number of cards, however, the system has merit.

Modern layouts are putting pickers closer to the opening line to eliminate the long pipes whose uncontrolled air currents may be causing neps and tangles.

CARDING. As cotton men argue the merits of fast carding, wool men are solving the problem of card production by going to wider models.

Reaction to the N. C. State recommendations for fast carding is quieting down, as mill men settle into two camps: those who say the ideas are not practical and those who are making them work to advantage.

The good spinnable fiber in card strips is getting more attention. A reduction of flat speed from 3 to 1.5 ins. per min. at one mill has almost halved good fiber in the strips and has reduced total strips.

A mill sponsored card-waste project at N. C. State is said to be reducing card waste considerably for participants, but results will not be publicly available for another year.

Conversions to larger cans are the order of the day for progressive mills.

Individual card drives have had a rough time. Of the several types on the market, none has gained universal acceptance because the efficiency of group drives continues to be favored.

Look for general adoption of other card improvements: ball bearings on cylinders, lickerins, and comb boxes; overhead cleaners; and improved wire.

There's still a lot of talk about metallic card clothing for cotton, wool, and synthetics. Definite savings can be shown in some cases, and acceptance may be wider in 1954.

Watch for the new synthetic cards to be announced this year. Just about every card manufacturer is working on one.

COMBING. Cotton mills appear to be favoring two-sided combers with six heads per side. One big advantage is the floor-space saving. Productions are as high as 46 lbs. per hr. Other types of combers are being run at speeds up to 135 nips per minute to obtain higher production.

Ribbon lappers seem to be on the way out, as sliver lappers alone have proved capable of making a lap smooth enough to put on the comber.

The forecast is for better fiber-length selectivity and fewer long fibers in the noils. Noils on medium cotton yarn numbers are 12 to 15% and up to 22% on finer yarns.

Worsted cop makers are leaning toward rectilinear combs for low noil percentages. And, as cotton and synthetic mills invade the worsted market, less combing is being done.

The increased demand for Vigoreux-printed mixtures indicates a steady expansion of this method. "Melanger" or mixer intersecting gilling and rectilinear combs are being used more and more for Vigoreux work.

DRAWING. Both the number of drawing processes and the type continue to be matters that each mill must solve for itself. On similar work, mills are running none, one, and two processes. There is apparently no standard by which drawing requirements can be measured.

Drawing is not an expensive process; so advocates of no drawing at all can't stress costs. The doubling and evenness accomplished in drawing is considered by most mill men well worth the cost.

Improved metallic rolls should increase in favor. The newer rolls should not be confused with older types whose performance sometimes gave a bad name to metallic drawing.

Larger cans, antifriction bearings, and higher speeds are increasing production and reducing costs in drawing.

In worsted drawing, pin drafters and gill reducers continue to replace conventional gill boxes. Balling-head units will soon become standard equipment for top dyers. Balancing of production is being made easier by increasing use of three-can units between the conventional duals and quads.

Worsted spinners continue to press the combers for even top, and some spinners are buying top on rigid evenness specifications.

Another demand by the spinners—uniformity in length—helped to bring about the development of top-breaking machines. These machines, just announced, will create much interest in 1954 and will be a useful addition to a combing plant—and maybe to cotton and synthetic mills as well. The Southwell and Berker machines can be used as drawing processes without fiber breaking, and the principle of positively driving the top roll may find wide application.

New turntables that permit double-meche delivery from the last pin-drafting operation have increased versatility.

The Auto-Leveler, shown on a gill box and on a drawing frame at the Manchester Show, is a better way than doublings to cope with uneven slivers.

ROVING. Frames as large as 12x6½ and 12x8 are now being used to take advantage of high-draft spinning. This is the major development in roving frames.

There have been refinements, however—in top-roll coverings, ball and nylon bearings, automatic single-end stop motions, roll stands, clearers, and overhead cleaning.

Both the vacuum and the electric types of stop motion are being used successfully, and with promising results. More mills are likely to buy such equipment in 1954 as mill data proves the devices.

Two new developments that look good are the 30-degree roll stand for longer blended fibers and a composition flat-clearer cover designed to eliminate eyebrowing and top-clearer picking.

A device that looks interesting is the cap with a square hole that fits on the top of the flyer and helps to concentrate twist where it is needed—between the front rolls and the flyer. Inexpensive as it is, this device, called Rotofil, will probably find wide acceptance. (We understand that the name Rotofil is already copyrighted for another product; so the name of the flyer cap may be changed.)

Improved overhead traveling cleaners are being installed to reduce

CONTINUED ON PAGE 194

More-Versatile Looms Attract Weavers' Attention

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

CLOTH SALES OF COTTON GOODS had little effect on weaving these fabrics the past year. Most cotton weaving mills rocked along with little or no curtailment. These mills did a lot of thinking toward loom modernization, and many of them actually bought new looms or modernized old ones.

This trend was followed: If the weave room was expanded to increase production, new looms were bought for both the addition and to replace old looms. If the weave room was not expanded, the old looms were merely rebuilt.

The most common rebuilding job on cotton looms and on some looms weaving synthetic fibers this year was the widening of the looms so that they would weave wider materials. The wider looms, of course, occupy more floor space; and in every case, the weave room had to be expanded. In most cases, the slasher room or supply room was relocated to make room for the wider looms.

Most of the activity in weave-room modernization took place the first half of the year. Most mills followed the "sit tight" policy the last half.

On the other hand, synthetic-fiber weavers sat tight the whole year. Most of the weavers had bought new looms heavily since the war years; and in most cases, the looms were the multipurpose type designed to weave a large variety of fabrics.

A lot of mills added "drop boxes" to their single-shuttle looms for filling-mixing purposes.

Others added box motions to weave four colors of filling where they had formerly been able to weave only two colors. This particular activity was slowed down over that of the previous year, though, because the market for plaid materials was slow. However, dope-dyed yarns and their design possibilities created a lot of interest and a little action in four-box weaving mechanisms.

Other than a slow sales market for synthetic fabrics, the fact that several new looms with entirely new weaving features were presented at once by the principal loom manufacturers probably slowed down the buying of new looms. New looms came on the market too fast, and mill men probably were confused.

Many mill men are interested in the looms and are watching them closely for performance at other mills before they buy. Then, too, their present looms, only a few years old, are so good that they're afraid to sacrifice the all-around weaving ability of their present looms for the more specialized and limited weaving features of some of the newer looms.

Fabric design, incorporating the use of the newer fibers and the blending of these fibers, was the outstanding development among synthetic-fiber weavers for the year.

In looking toward the coming year, the following things are indicated in weaving:

1. Mills with older cotton looms left alongside of new looms in recent expansion programs will have a yardstick to compare the costs and earnings of each loom.

2. Synthetic-fiber weaving mills will have had time to experiment with their new cloth designs and settle down on materials with sales appeal that can be produced at a profit in a competitive cloth market.

3. The mills playing around with homemade filling-mixing looms (in most cases doing a poor production job at present) will turn to the newer looms with the drop-box attachments.

Machines, Yarns, Products Change in Knitting Mills

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

THE TREND TOWARD fine-gauge hosiery continues. Stockings are being made on 72-gauge and 75-gauge single- and four-section machines. Multisection full-fashioned hosiery-machine builders will probably make a 72-gauge machine, and the small-section machine makers will respond with an 81-gauge machine.

More 12-den. nylon will be used, and knitters are looking for a yarn that is finer than 10 den. Helanca yarn was tried for full-fashioned hosiery, but the finished stocking lacked sales appeal on the counter.

The introduction of the 474-needle circular machine will take up more supplies of 12-den. yarn.

More and more mills are going into Helanca nylon sock production, and it will be late in the year before these hard-wearing socks will reduce orders. Argyle socks are now being made with Helanca yarn, and the new fine-gauge argyle machines are well adapted for this work.

New ideas and designs are being sought by knitters, and a dyed-pattern sock that may influence the fancy-sock market is reported. More hosiery knitters are swinging from cotton to synthetics and blends.

New end uses for tricot fabrics are being discovered. The latest use for tricot fabrics is in bedsheets, where their elasticity is said to be convenient. Dope-dyed yarns, stabilized cloths, fancy nets, and pleated fabrics are being knitted in greater quantities by the small tricot knitter.

Dacron is finding favor among knitters and buyers, but knitters must use dull nylon with the Dacron to make the fabric opaque.

Raschel machines are being speeded up, and more of these machines are being put into production to compete with tricot knitters in tulles and nets. More fancy shoe fabrics will be made on raschel machines, and a market

awaits bathing-suit material in body widths knitted from nylon-and-rubber yarns.

Full-fashioned-hosiery manufacturers and machine builders have been interested in producing sweaters and machinery for sweater manufacture. The outerwear men fear this step, but new markets could be opened up by the quality-minded hosiery men who could introduce new ideas such as women's full-fashioned, fine-gauge suits in Dacron-wool blends.

The introduction of machinery to produce a bigger variety of patterned jersey fabrics with greater production will influence the market for T-shirts and children's wear.

A new pile fabric machine that knits pile from sliver and needs no machine finishing opens up new markets for this type of fabric. Weavers of this material will lose some of their markets to these products.

BLEACHING, DYEING, AND FINISHING

Progress in Finishing Sparks 1953 Activity

+ 1953 was a year of progress for the bleaching, dyeing, and finishing branch of the industry

+ New techniques and new machinery are solving some of the problems created by blends

+ Better finishes score heavily in the market

By GEORGE M. MOISSON

ON THE BASIS OF new machinery developments and mill expenditures for improvement in 1953 as compared with 1952, the bleaching, dyeing, and finishing branch of the textile industry was one of the most active segments of the industry.

As indicated in the Mill Purchases section of this Review and Forecast, finishing plants bought 4.0% more machinery, equipment, and supplies in 1953 than in 1952.

And during the year, several new machines, some incorporating principles new to finishing machinery, were put on the market.

The Burlington machine for tricot dyeing is said to have numerous advantages over older methods. The cloth is wound around a perforated steel core and is handled as on a horizontal-beam dyeing machine. A mill in Chattanooga, Tenn., has installed several of these machines (TW, April '53, p. 84).

The new Vapojet dryer, which uses superheated steam under pressure, has been placed in the resin-curing range of a Paterson, N. J., finishing plant and is doing a good job (TW, June '53, p. 108).

New economy of space and speed of operation have been realized by an engineering job in a Pontiac, R. I., bleachery (TW, May '53, p. 104).

A new application of differential pressure recorder-controllers has proved itself in a package and beam dyehouse. By controlling beam density and dye-liquor flow, the quality of dyeing is increased and seconds are reduced (TW, July '53, p. 90).

More efficient dyeing of rayon piece goods with vat dyes is accomplished by slowing down the dyeing rate and other minor process modifications (TW, Aug. '53, p. 104).

Wool dyeing can be done more evenly and with economy of dyestuffs and chemicals when diammonium phosphate is used. Details of the procedure are told in TW, Feb. '53, p. 110.

The current demand for washable woolens brought a need for washable wool colors. A new product called Chromofix has gone a long way toward solving the problem (TW, July '53, p. 110).

Cyanoethylation of cotton makes a fiber with new properties by altering the chemical and physical characteristics of the fiber. Appearance is the same, but dyeing and microbiological properties are drastically changed by reaction with acrylonitrile (TW, Oct. '53, p. 96).

Rayon stabilization to wet processing has been attempted by several companies. A roundup of the X-2, Avcoset, and Aquex treatments is reviewed in TW, April '53, p. 76.

Cotton Goes Chemical In Machines and Methods

By C. NORRIS RABOLD
Consulting Editor, TEXTILE WORLD

LAST YEAR in our Review and Forecast issue, we mentioned the work of research laboratories toward transformation of the cotton molecule by chemical treatments. This work has now reached a point where certain of these treatments are being run on a practical scale.

NEW METHODS. The acetylation of cotton with acetic anhydride considerably improves rot resistance and resistance to heat. Plant operations are now being successfully carried out in regular production.

Cyanoethylation, the reaction with acrylonitrile, is still largely in the laboratory stage; but large-scale treatment of stock, yarn, and piece goods appears feasible, with precautions and suitable equipment. Cyanoethylated cotton shows considerably improved resistance to micro-organic attack and heat degradation. Improved abrasion resistance and increased color value of dyed fabrics are additional features.

A third development is the flameproofing of cotton by reaction with tetrakis (hydroxymethyl) phosphonium chloride. Fabrics and fibers so treated have excellent durability to repeated launderings and dry cleanings, no afterglow, minimum strength loss, and minimum stiffening. This last feature is particularly important in wearing apparel. A marked degree of shrinkage control is claimed for the treatment. No special equipment, other than a curing oven, is needed.

NEW MACHINES. A new predryer-and-tenter-frame unit uses superheated

steam instead of hot air for the drying of cotton and synthetic fabrics. Steam is introduced through nozzles on both sides of the fabric at a temperature of around 300° F. After all air has been excluded from the dryer, the steam recirculates through the cloth and produces rapid and uniform drying. As the steam picks up moisture, it is recirculated through heaters to bring it back to the desired drying temperature.

Use of steam instead of air should avoid many problems of oxidation and other reactions that can take place with finishing compounds when they are dried in the conventional air dryer. In addition, the use of steam is said to be more economical.

We may expect to see more rubber-belt shrinking machines installed in cotton-finishing plants that do compressive shrinking. The use of rubber in place of wool-felt blankets has long been the subject of experimentation, but technical difficulties as to the composition and construction of rubber blankets have only recently been overcome.

Rubber-belt units have several disadvantages in that they are less efficient on heavy fabrics and are limited as to the amount of shrinkage they can take out. On the other hand, rubber blankets have many advantages: long life; no break-in period; no drying cylinder or shoes required; cloth back- and face-uniformity good; positive shrinkage control; and, most important, the blankets don't need to be changed when styles of cloth are changed.

NEW FINISHES. Another new and attractive finish for cotton fabrics is the combination of resin impregnation and textured effects applied on embossing calenders. Finishes produced in this manner have proved quite popular.

A newer development is the combining of the textured effects with various printing inks so that colored embossed patterns are produced. Only recently have inks been made available that could withstand the high temperatures on the calender without breaking down, sticking in the calender roll, or showing other objectionable characteristics. It is now possible to apply color to the raised portions of the fabric and also to apply color to the indented portions of the pattern.

These operations are known as "tipping" and "inlaying," and they may be carried out alone or in combination (TW, Dec. '53, p. 99). Thus, a whole new line of colored patterns combined with embossed effects is made possible.

CHEMICAL PROCESSING. Organic chelating agents for sequestering heavy metals such as calcium, copper, magnesium, iron, etc., are being used to minimize stains in piece goods, prevent resists, and prevent breakdown of chemical baths. Such materials are of value in the dyeing of raw stock, beams, and packages. Sequestering heavy-metal impurities in the cotton often means cleaner, brighter, and more-uniform dyeings.

Oxidation of vat colors on continuous dye ranges with sodium bichromate and an organic acid has long been standard practice. Attempts to use hydrogen peroxide alone or combined with sodium chlorite have not always been successful because of improper concentrations, poor pH control, and temperature fluctuations. Recent studies have developed proper running formulas. Shades oxidized with peroxide or sodium chlorite have good fastness when the proper oxidizing formulas are used. Instrument controls on feeds and temperatures now permit almost any vat shade to be oxidized quickly, cleanly, and uniformly.

DYEING SYNTHETICS. In the field of hydrophobic fibers, the best color values and fastness are obtained with the use of selected dyestuffs applied in pressure equipment. Devising and constructing such equipment for the dyeing of raw stock, packages, and beams has not been too difficult because existing machines can be adapted to operate under pressure.

The application of dyes to fabrics made of hydrophobic fibers has presented a greater problem because none of the piece-dyeing equipment now operating is designed for pressure work. Consequently, Du Pont has developed a machine called the Barotor. This machine has been redesigned several times, and goods should now be handled on it satisfactorily in sizable yardages. Time of loading and unloading this machine has also been minimized.

MORE PRECISION. In every process described, precision and control are of the utmost importance for proper results. Mechanical and electonic controls are a necessity; recording of running conditions such as time, temperature, and concentration of chemical baths is a must. In resin applications and embossing work, the same conditions must be observed and also exact moisture control must be maintained. As new mechanical and chemical treatments are brought forth, the finisher must supplement and adapt both his equipment and his techniques to obtain the finest degree of precision and control.

Public Demands Wool Blends And Dimensional Stability

By S. E. MIRGH

ALL THE AVAILABLE SYNTHETICS are being blended with wool, either on the woolen or worsted system, with varying success.

None of these blends possess all the desirable qualities and characteristics of all-wool fabrics of similar natures, and the consuming public has had some unfortunate experiences. Synthetics will continue to find increasing use on the basis of their own merits, any short supply of fibers that may come, and the advertising programs directed at the public by all fiber manufacturers.

SHRINKAGE CONTROL. Demands for fabrics, both woolen and worsted, with dimensional stability to both sponging and laundering will undoubtedly increase. There will, therefore, continue to be increasing use of overfeed mechanisms on cloth dryers. Elimination of stretching and tensioning mechanisms on all finishing machinery will reduce the inherent sponging shrinkage in the normally finished woolen and worsted fabrics.

The cutting-up trade should wake up to the fact that it is spending a lot of needless time and money in sponging its fabrics. The finishes produced by pressing, manteling, or decating are destroyed by sponging. Equipment and know-how for mill finishing permit goods to be delivered ready for the needle without the expense of sponging operations.

FELTING SHRINKAGE. Several processes are now available for producing woolens and worsteds with dimensional stability to ordinary household laundering. These methods, many of them based on chlorination, doubtless will become of increasing importance in the future. Launderability, not only in fabrics of 100% wool but also in fabrics containing 15 to 20% of some of the synthetics, is satisfactory.

MOTHPROOFING. The increased use of mothproofing compounds on fabrics containing wool will depend to a large extent upon the advertising campaigns of the makers of these compounds. There seems to be no great tendency in the present market for manufacturers or selling houses to increase the cost of their yardages by mothproofing.

RESEARCH

Interest in Research Continues at High Level

✦ **Research expenditures leveling off at postwar high level**

✦ **Current research promises significant changes in fibers, processes, finishes**

By **WILLIAM A. NEWELL,** Consulting Editor, TEXTILE WORLD

RESEARCH, both as a state of mind and as a commodity purchased by industry for improving efficiency and quality, is continuing its constructive work at a record high level. Nothing is sacred in today's progressive textile mill. Everywhere men are probing into old concepts, new theories, and previously unexplored areas.

Expenditures by the textile industry for research are continuing at a record-high level. But the rate of rise of expenditures has leveled off as a result of economic retrenching by mills over the past two years. The two most recent figures for expenditures for research are for 1948 and 1951, and the figure for both years is about $15-million, or about 0.9% of sales volume.

1953 ACHIEVEMENTS. The results of research in 1953 are still too new for their impact or significance to be known. But research organizations have given mills plenty to think about and to evaluate. Among the most significant new developments of 1953 are cyanoethylation of cotton fibers (ITT), decrystallized cotton fibers (SRRL), blends of polymers for synthetic fibers (TRI), washable finishes for rayons, propiolactone-treated wool, improved pulps for manufacture of cellulose fibers, and new high-strength cellulosic fibers.

WHO'S DOING WHAT. The following is a listing of most of the current important research projects in progress in independent (nonmill) research laboratories.

Fiber and Fundamental Research

Southern Regional Research Laboratory

Structure and chemical composition of the primary wall of the cotton fiber

Physical properties of cotton fibers that have been chemically modified by treatments with ethylamine to decrystallize them or acetic anhydride to partially acetylate them

Practical technique for evaluating the relative crystallinity of the cellulose in cotton fibers

New reagents to reduce the crystallinity of the cellulose of cotton fiber

Improvements in tensile-strength testing of cotton fibers (the separation of the tester jaws is varied and the results of tests compared with yarn-strength measurements to improve the prediction of yarn strength)

Cottons decrystallized with ethylamine are treated with various cross-linking agents to improve elastic recovery

Beta-propiolactone reacted with cotton cellulose to give new and useful properties to the fibers

Cross-linking compounds applied to cotton cellulose that has been decrystallized in such a way as to produce cellulose III residual crystalline structure with a view to improving its elastic and other valuable properties

Etherification reactions of cellulose studied to determine the mechanisms, methods of improving the rate, etc.

An extensive exploratory study to determine the feasibility of producing a number of cellulose-ether compounds and establish their principal characteristics and properties

A study of the usefulness of the Stelometer

School of Textiles, Clemson Agricultural College

Correlation of yarn strength with fiber strength measured at different gauge lengths

Textile Research Institute

Investigation of kinetics of hydrolysis of viscose, hydroviscose, and hydrocellulose in 85% phosphoric acid at room temperature

Study of the homogeneous methlyation of hydroviscose to learn more about submicroscopic structure of cellulose

Continuing studies of change in flow properties of solutions of cellulose as affected by textile processing operations

Studies of molecular and fine structure of cellulosic fibers through stress-relation technique

Effect of acid treatment on regain of protein fibers

Dyeing of cellulose acetate by a red acetate dye from carbon-tetrachloride solutions

Reaction of surface-active agents with cellulosic fibers

Continuing studies of structure of wool fiber

Studies of mixtures of polymers and textile materials made from them

Study of structure of nylon and Dacron fibers using polarized infrared radiation

Effect of temperature change on stress of textile filaments and yarns held at constant extension in water

Relation of cotton-fiber structure to strength

Influence of chemical treatments on mechanical properties of wool

Electrical resistivity of fibers

Frictional generation of electrical changes by fibers

Relation between static and dynamic behavior of fibers

Punched-card techniques for computations on hypothetical yarns

Two-dimensional stress-strain of fabrics

Yarn-Manufacturing Research

Cotton

Institute of Textile Technology:

Processing the same cotton through opening, cleaning, and carding in 20 mills

Southern Research Institute:

Effect of microorganisms on processing

School of Textiles, N. C. State College:

Reduction of waste in carding

Increasing carding production

Development of instrument for predicting nepping potential of cottons

Philadelphia Textile Institute:

Spinning and weaving properties of chemically modified cottons

Standards for knitting yarns

Southern Regional Research Laboratory:

New and improved opening and cleaning equipment

Processing organizations for optimum production rates, drafting performance, and product quality

School of Textiles, Clemson Agricultural College:

Electrostatic opening and cleaning of cotton

Improvement of processing by use of additives to increase frictional properties of fiber

Roll coverings for spinning frames

Other Fibers

Fabric Research Laboratories, Inc.:

Investigation of translation of hard-fiber properties to cordage structures

Factors that influence engineering prop-

erties of such blended yarns as wool with nylon, viscose, and acetate

Instruments and techniques for measuring static electricity

Synthetic Fibers

School of Textiles, N. C. State College:

Spinning qualities of eleven new synthetic fibers

Philadelphia Textile Institute:

Carding, spinning 100% glass fiber

Spinning properties of new synthetic fibers CONTINUED ON PAGE 220

ENGINEERING

Maintenance of Production Equipment Challenges the Plant Engineer

- **Skilled mechanics are displacing rule-of-thumb methods**
- **Training, inspection, and record-keeping assume added importance**
- **Machine controls are broadening the engineer's scope**

By RICHARD B. PRESSLEY, Associate Editor, TEXTILE WORLD

IF YOU ARE A plant engineer or master mechanic, the chances are that you are busy now. But you will soon become busier than you've ever been.

SCOPE INCREASING. The working scope of engineers a few years ago started in the machine shop and boiler room and ended at building maintenance, with a few air lines and steam pipes throughout the plant thrown in.

Now the picture has changed entirely. The engineer in a modern textile plant goes to production machines in several departments of the mill to service them.

Take slashers for an example. A recent survey of 16 mills showed that 15 of the mills use instrument controls. The controls include pneumatically loaded squeeze rolls, variable-speed drives, and moisture-content and size-viscosity controls. Viscosity controls are relatively new; the other controls listed aren't. But the fact is that the controls have been proved and their general use is established.

Where the plant-maintenance crew used to go to the slasher room only occasionally to check a steam line or to look at a drive motor, they now visit the department daily to check the delicate instruments for accurate performance. In addition, they have set up preventive-maintenance schedules.

MORE CONTROLS. Or go further back in yarn processing to the opening room. Here, electrically operated blending machines need the type of servicing far beyond the ability of the operator. Again, the engineering department is called in to replace or adjust mercoid or electro-mechanical switches and to service conveyor systems.

The same maintenance mechanic may then have to jump over to the weave room to check a microswitch on the filling stop motion that's a little beyond the ability of the average loomfixer to fix.

AIR AND LIGHT. Humidifiers used to be under the heads of the various departments. Now that air-conditioning systems are becoming common, the complete air-conditioning system, including auxiliary atomizers, is being serviced by trained men serving under the plant engineer.

A weave-room overseer, for example, no longer has to worry with temperature or humidity variations; he simply picks up his phone and calls the maintenance department, and the worries are theirs.

Fluorescent lighting has also taken cleaning work away from department heads and placed it in the hands of maintenance men in many plants. Blanket replacement of lamps, along with regular cleaning schedules, often gives better lighting at lower cost.

THE TREND. Each new machine placed in production is taking more work away from department heads and giving it to the plant engineer. For example, the doffing period on one of the new large-package spinning frames has been greatly extended to reduce the work of the production department. But the old spinning frame ran with only a 7½-hp. motor; the new one requires one motor of 20 hp. and an auxiliary motor of 1½ hp. Again, the maintenance department has more work.

In short, the trend in the most efficiently operated textile plants is for production men to produce yarns and cloth and for the maintenance department to give more attention to machines.

At present, maintenance men are stopping at cards, spinning frames, and looms, but indications are that their special training in the maintenance of other equipment qualifies them to at least advise to some extent on the methods to be used in overhauling old production machines and in setting up new machinery.

BUILDING REPAIRS. Buildings, too, are requiring more attention than formerly. Condensation problems, for instance, came with windowless buildings required for air conditioning. Insulated walls (if not designed by the plant engineer, at least approved by him) are the result. Condensation is a day-to-day complaint.

Roofs are being kept in better condition nowadays.

The trend in maintenance of buildings is toward periodic inspection rather than waiting for paint to crack off walls or for roofs to leak. Many mills have a continuous painting cycle so that each department of the plant is painted regularly. For example, one mill operating 3,500 looms and nearly 150,000 spindles employs its own painters; and the entire plant is repainted every five years.

MEETING THE CHALLENGE. Maintenance men who successfully meet the challenge of increased work will set up:

1. A training program to teach new employees specialized jobs
2. Inspection programs for equipment and buildings

3. A record system to show what work has been done and what needs to be done

Proper machine tools, safe and portable scaffolds for cleaning and other overhead work, and portable workbenches with tool compartments for use in production departments are examples of proper equipment that the success-conscious engineer will get to keep his department operating smoothly at low cost.

PERSONNEL ISSUES

Benge Study Pinpoints Disturbing Employee Attitudes

- **Textile-job satisfaction isn't what it should be**
- **Each plant has a pattern of employee likes and dislikes**
- **Base your program for 1954 on facts already at hand**

By MACON P. MILLER, Director, Industrial and Public Relations, Fieldcrest Mills

THE TEXTILE INDUSTRY has a major personnel issue to work on in 1954: personnel matters.

This problem was pointed up in the study reported by Eugene J. Benge in the September issue of TEXTILE WORLD. Benge's findings, based on questionnaires administered to employees in eight textile mills, were that these workers scored generally lower than the average for U. S. industry on certain indices of job satisfaction.

We need to know more about this Benge study. For example, how many plants in how many industries comprise this U. S. average? How significant are the differences between the textile plants surveyed and the U. S. average? Obviously, some of these differences are small enough to be accounted for by chance.

Finally, we cannot generalize from eight textile mills to the textile industry as a whole.

DISQUIETING THOUGHT. Despite these questions and limitations, the study does suggest that there are segments, probably sizable, of the textile industry that do not provide employees with as many satisfactions as some other industries.

This is a disquieting thought, particularly in view of another development: the diversification of industry in locations that had previously been exclusively or chiefly textile-producing centers. In an industry that is highly competitive in the product sales market, many textile plants are for the first time facing serious competition in the labor market. As compared with competing industries, what job satisfactions do they provide?

Benge's findings show the textile industry's disadvantages to lie primarily in (1) "plant atmosphere" (which we assume to mean some aspects of working conditions), (2) "opportunity to make suggestions" and "how complaints are received" (which are communications matters), and (3) "how job vacancies are filled" (which is a personnel procedure).

ASK QUESTIONS. In plants other than those surveyed, the pattern of employee likes and dislikes may be different. The point is that we need to appraise our employee-relations situations in our own individual plants. We need to ask questions like these:

Are we finding it difficult to interest apt young applicants in employment in our carding and spinning rooms? If so, what can be done about it?

Are we getting and retaining the technical and college-trained people we need? If not, what can be done about it?

Are turnover and absentee rates high? If so, what can be done about it?

There are many easy solutions to any of the problems that may be uncovered in such an appraisal, but the solutions must be related to our specific problems.

WHAT WE KNOW. We need not start from scratch in the matter of understanding the bases for employee satisfactions and their effect. There is already a large body of knowledge we can draw upon.

1. We know that such obvious factors as pay, steady employment, and working conditions are not always the major causes of satisfaction or dissatisfaction. But we would be foolish to minimize their importance on the basis of surveys conducted in the 1940s under conditions different from our own. These obvious factors are often crucial.

2. We know that social satisfactions on the job involving the relationships and contacts among employees and between employees and supervisors are a vital aspect of employee satisfaction. But we are beginning to see that these social satisfactions operate best in conjunction with other satisfactions rather than as a counterbalance to major dissatisfactions.

3. We know that employees want the opportunity to move ahead in line with their abilities. But we also realize that some employees have aspirations beyond their abilities and cannot be satisfied in this regard.

4. We know that the foreman is the key man in any program intended to improve human relations. His conduct is a major source of employee satisfaction or dissatisfaction. But we are finally learning, after many false starts, that "training" a foreman in this area often requires a basic reorganization of his attitudes.

5. We are beginning to see, still rather vaguely, that improved job satisfaction alone may not be expressed in increased output or efficiency on the job, although there may be other favorable by-products. Perhaps some type of motivation beyond job satisfaction is required to assure improved job performance. This motivation may involve such matters as:

a. Recognition

b. Adequate communications up and down the line

c. Participation in certain decisions or an enhanced feeling of personal contribution

WASHINGTON OUTLOOK

Politics Will Dominate 1954 Government Action

- Trade and tariff policy won't change much
- General sales tax is still a possibility
- Military procurement and controls assume less importance

By McGraw-Hill Washington Bureau

THE KEY TO THE Washington outlook this year is politics.

The almost even Republican-Democratic division of the House and Senate makes it mandatory that Eisenhower and his team put their top priority on a legislative program designed to win this fall's Congressional election.

Such a political imperative will cast its shadow over almost every issue of any importance—and that includes labor, taxes, military spending, federal budget, inflation, or what have you.

The following run-down on key issues takes into account two basic assumptions: (1) that there is no new breakout of war a la Korea or larger, and (2) that there is no business recession. Naturally, any such development would throw new programs and policies to the fore.

TARIFFS. The textile industry's split over tariffs and foreign trade is typical of the Administration's problem.

Wool growers are pushing for more protection; but many wool manufacturers, particularly in New England, are opposing higher tariffs on raw wool because that would boost their costs. Cotton growers want additional protection against imports, but they also want lower tariffs on other products so that cotton exports will be stimulated. Textile-machinery makers export a chunk of their output; so most of them will oppose any general tariff boosts but some who are facing increased foreign competition will demand more protection. Synthetic-yarn manufacturers who complain that they are being hurt by foreign dumping will push for tightening of the antidumping regulations.

U. S. trade and tariff policy won't change much this year. Republican Congressional leadership will block Administration attempts to lower tariffs, and the Administration would block Congressional efforts to raise them.

The Administration would like a compromise policy that would lower trade barriers slightly over a period of years. The thinking runs like this: Tariffs would be stabilized where they are by extending the Reciprocal Trade Act for two or three years. A commission would be set up to study ways for the Government to help industries hurt by imports to readjust to foreign competition. Once such a scheme is in operation, the escape clause in the trade act would be tightened up to make it harder for injured industries to get tariff relief.

TAXES. The possibility that a general sales tax may be levied by Congress on finished products such as clothing, rugs, and upholstery tops any list of tax worries for the textile industry in 1954.

Six months ago, the chances of such a tax looked very good. The Treasury Department was actively studying the idea as part of a plan to lower high excise taxes and then make up the loss in revenue by taxing items now under the excise system. Such a scheme would include clothing and household furnishings. A bill to accomplish this move is being prepared for Rep. Noah Mason, Illinois Republican.

But Congressional sentiment against new taxes is rising. The bill's chance of adoption is declining, although there is still the makings of a first-class fight on the issue if Eisenhower and the Treasury Department should get actively behind it.

Talk about a decline in business dominated the tax outlook as the Congress got under way. Two tax cuts came the first of the year—the reduction in personal-income tax and the end of the excess-profits tax.

Two other tax reductions are in the works: a drop in the top corporation-income-tax rate from 52 to 47% on April 1, and a reduction in special Korean excise taxes scheduled for the same date.

There may be a Republican squabble over these reductions. There's the need for revenue to keep the deficit to a minimum, but there's the growing sentiment in favor of tax reduction as a stimulant that's needed to keep our economy on an even keel.

Another tax measure that seems certain, the so-called "tax revision" bill, would mean a reduction in taxes for many people. It will be popular in an election year because it would eliminate many of the inequities in our present tax rates. It might give additional deductions for working mothers, bigger medical allowances, faster depreciation for businesses, less double taxation of corporate dividends, and the like.

MILITARY PROCUREMENT. The signing of a Korean armistice brought a significant change in Armed-Services procurement policies. New buying in clothing and equipment came to an almost complete halt.

This moratorium is to allow a work-off of supplies contracted for before the signing. But inventories should be down to better levels by the middle of the year; and from then on, the outlook is for steady purchasing of goods, although at a level considerably under the heavy '52 and early '53 rates.

A major reason for these heavy rates was the establishment of the Department of Defense duck and webbing pool, as well as a reserve of woolen textiles and knitted items. Pentagon planners set the levels of these stockpiles as a mobilization reserve, usable in case of shooting war until manufacturers could begin production to meet the military's requirements.

Now that the stockpiles are set, there won't be more buying than is justified by current needs. In the case of the webbing pool, however, stock will be rotated.

One factor that may mean an expansion of purchases is the anticipated turnover of military manpower in

CONTINUED ON PAGE 206

WORLD TEXTILE PICTURE

Most Countries Are Recovering From World Textile Slump

- **New methods and equipment are being installed to reduce costs in many areas**
- **Underdeveloped countries are rapidly becoming self-sufficient**
- **Higher tariff protection is sought by most countries**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

WITH THE EXCEPTION of Canada, Brazil, and Mexico, the world textile picture was brighter in 1953 than in the previous year.

Many countries sought high tariff protection to guard their domestic textile industry from foreign competition.

India is competing successfully with Japan for low-quality markets. Japan's cotton exports have increased, however; and a trend toward quality goods is noticed.

Man-made fiber production is being increased in many countries, and a Japanese expert predicted that Japan will use 62% man-made fibers by the year 2000.

Attention is being paid to reducing costs in many countries by the installation of new machinery and modern methods. Some countries are reported to be 50 years behind in their textile processing.

British cotton mills have experienced a busy year, but workers are hard to find after the recession of 1952. Growing replacement of cotton by staple rayon is seen in Britain.

OVERSEAS REPORTS.

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Cotton- and rayon-yarn production in Britain at the end of October, 1953, stood at 777,010,000 lbs., compared with 770,670,000 lbs. for the whole of 1952.

The shortage of operators is keeping some machinery idle and preventing mills from approaching the 1951 output.

There is a steady shift from cotton to rayon. At 28¢ per lb. rayon staple is highly competitive with American cotton.

Future levels of rayon production depend on the level at which exports can be maintained. Import restrictions and the clamor for higher tariffs of importing countries intensify competition between exporting countries.

Imperial Chemical Industries Ltd. has licensed the production of Terylene (Dacron) to companies in France, Germany, and Italy. Terylene appears to be making more headway than other new fibers. Opinion differs about the success of the wool-like fiber Ardil.

Terylene is not yet in full production. Two plants with a total capacity of 22,000,000 lbs. should be in production by 1956. Many British mills still get only experimental quantities.

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The bill for terminating the Raw Cotton Commission and reopening the Liverpool cotton market came up in Parliament for its second reading in November. It is expected to make Liverpool the world's cotton market center again. Users will be free to buy their cotton direct from overseas shippers and to hedge their purchases by selling and repurchasing futures for appropriate dates on the Liverpool market.

However, each operator will be bound to a minimum contract of 100 bales and will probably have to put up a margin of $5.60 per bale.

It is hoped that these dealings will begin in the Liverpool market next May for October delivery.

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Further increase is not expected because cloth is now entering a buyer's market and exports have reached a ceiling. Exports (chiefly to Asian countries) are 700,000,000 yds. per year.

To meet the buyer's market at home and competition abroad, the problem of lowering costs is now being tackled. New equipment is the answer to most of the problems, as much of the existing plant is over 25 years old. 150 of 453 cotton mills with 11,500,000 spindles are officially rated as inefficient and uneconomic.

Supplies of raw cotton have been good. With a carry-over of 1,800,000 bales of foreign cotton, 3,200,000 bales of Indian cotton were produced in the 1952-53 season. It is doubtful if India will attain its 1956 goal of self-sufficiency, since the consumption is 3,500,000 bales, including long-staple cotton.

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Cotton exports from Japan exceeded last year's by over 100,000,000 sq. yds. These exports are forced because domestic price levels are about 30% above the world's market levels, and the textile industry has little incentive to export.

The government has established a two-price system under which manufacturers buy imported raw materials according to their export records so that they can export at prices below the domestic level. Cotton yarn shipments have been made at 53¢ per lb. when local buyers paid 75¢ per lb.

It is expected that inflation will continue because of the unbalanced budget and further increase the gap between local and world prices. Exports are made at 500 yen to $1 U. S., although the official rate is 360 yen to $1 U. S. If Japan is charged with dumping, the yen may be cheapened still further.

Dyed, printed, and other finished fabrics made up 44% of the exports, compared with 37% in 1952 and 28.5% in 1948. Yarn numbers averaged 30s, compared with 24s a few years ago.

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For example, for 3-den., 2½-in. stock, card sliver made from early Acrilan showed 35% staple breakdown. Improved Acrilan has about 10% breakdown. Similarly, for the same denier and staple length, yarn elongation has increased from 11% to 20%, and Stoll flex-abrasion cycles to break have been approximately tripled.

Fabric Possibilites

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Acrilan swells very little when wet and retains about 80% of its dry strength. It is also classed as a hydrophobic fiber, since it absorbs about 1.25% moisture at average relative humidity. These physical properties result in quick-drying fabrics made from spun yarns because the fiber does not pack down to retard drying.

Fabrics made with as much as 50% Acrilan in combination with other fibers that have high shrinkage characteristics give excellent stability in washing. It is therefore possible to obtain fabrics that are easily maintained because they are readily washed and they dry quickly. Exceptional performance has been obtained in knit goods, woven shirtings, ladies' dress wear in medium and suiting weights, and work and play clothing.

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While many fabrics will employ 100% Acrilan yarns, the fiber is compatible with and easily blended with acetate, cotton, Dacron, nylon, rayon, and wool. Usual blending techniques of floor, drawing frame, or pin drafter are used with good results.

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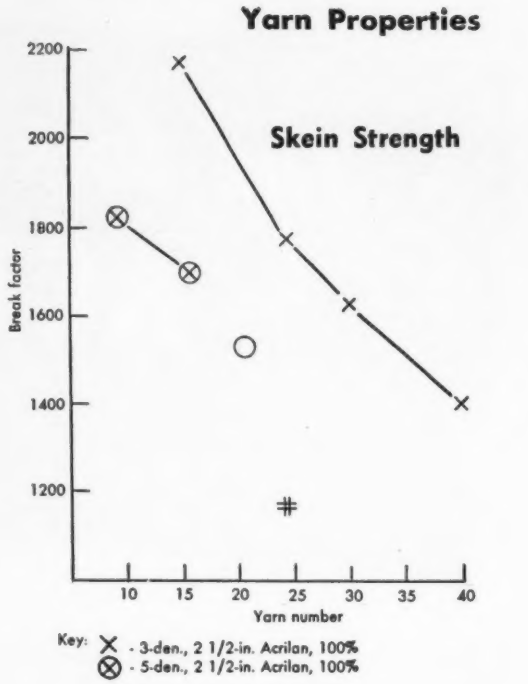
As in the case of other fiber blends,

Properties of Improved Acrilan
(Specific gravity — 1.20)

Single filaments	
Strength	
Conditioned	2.5 grams per denier
Wet	2.0 gpd.
Extensibility	
Conditioned	31%
Wet	31%
Average stiffness	8.0 gpd.
Instantaneous elastic recovery	
2% extension	100%
5% extension	85%
10% extension	62%
Shrinkage in boiling water	2.5%
Staple fiber and fabric	
Moisture regain (at 58% r.h. and 70° F.)	
From dry side	1.24%
From wet side	1.59%
Safe ironing temperature	300° F.
Safe resin-curing temperature	275° F.
Chemical resistance	
8% sulfuric acid for 1 hr.	No strength loss
Wool carbonizing	No strength loss
Weak alkalis	Fair
Kier boil	Poor



the earlier the blend is made in the process, the better the blend. Blends with acetate, Dacron, nylon, viscose, and cut wool top are usually made before picking. A blend of uncut wool top is best done on the gill box or pin drafter, and cotton blends are done in two or three processes of drawing.

The accompanying yarn-properties graph shows that a blend of viscose and Acrilan gives less strength and extensibility than the 100% Acrilan in yarn form. This condition is attributable to the difference in the extensibility of the two fibers. The wool blend gives lower strength but a more nearly normal Acrilan extensibility because of the similarity of the two fiber extensibilities. In both cases, sufficient strength and extensibility of the blended yarns are obtained for fabrication in a wide range of yarn numbers.

Acrilan blends well and gives good yarn strength and extensibility with nylon because of the similarity of the fiber-extensibility properties. For use in socks, work clothing, etc., a small percentage of nylon increases the abrasion resistance and fabric performance considerably. In these blends, Acrilan retards the tendency toward pilling of the nylon.

Although mechanical abrasion tests are not an absolute measure of fabric performance, a comparison of relative abrasion resistance of Acrilan with other fibers is given below. This comparison can be used as a guide in preparing the proper blend when exceptional mechanical abrasion of the fabric is required.

No woven-fabric failure has been reported in the variety of materials merchandised to date, and improved Acrilan has an abrasion rating three times higher than the original fiber. Although Acrilan does not rate high by the Stoll flex-abrasion test, it rates favorably with certain older fibers that have given good performance for years.

Here's how seven fibers stack up in flex-abrasion tests on unblended fabrics. Cotton has been taken as the base, with an index value of 100.

Acetate	20
Acrilan	60
Cotton	100
Wool	125
Viscose	190
Dacron	200+
Nylon	200+

Watch These Points In Processing Acrilan

Acrilan processes readily on standard machines of the cotton, woolen, or worsted systems currently used to make synthetic or natural-fiber yarns. Standard adjustments within the range of the machine design can be made to allow for the high bulk factor of Acrilan.

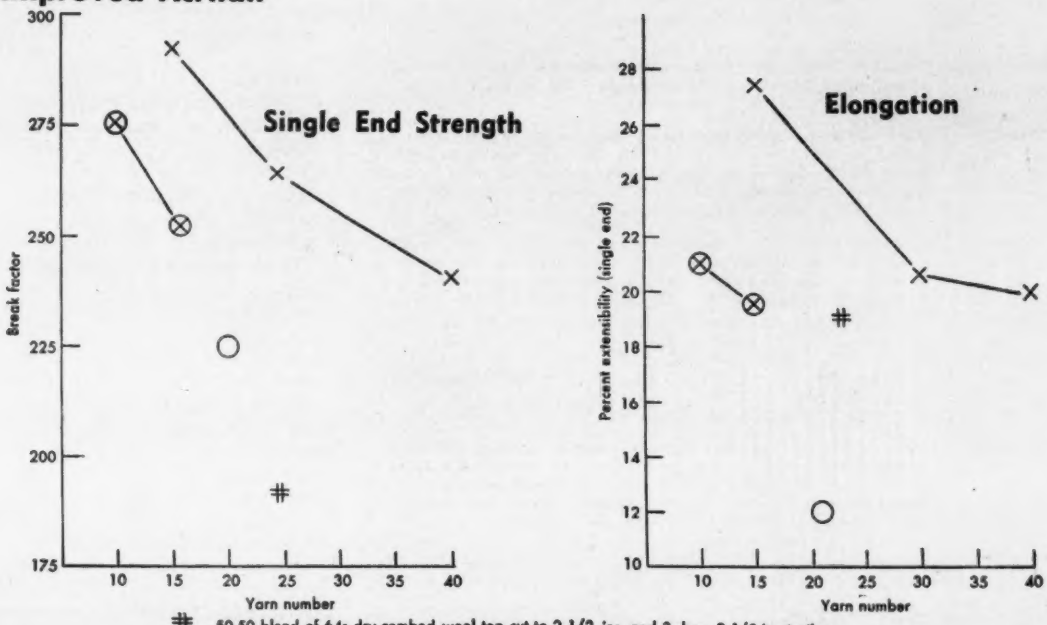
BLENDING, OPENING, TINTING. Standard equipment is used. The tint solution should be checked for fugitivity. Water-base tints without mineral or sulfonated oil should be used. Approximately 0.5% (on weight of tint solution) of a nonionic scouring agent such as Triton X 100 assists tint removal. When polyacrylic acid sizes are to be used, do not tint the Acrilan. There are usually no fugitivity problems when Acrilan is slashed with converted starch, gelatine, or PVA sizes.

PICKING. In picking the 100% fiber, watch the draft adjustment on the cages to obtain proper distribution of the stock. The bulky fiber will cover the top cage excessively if all the air draft is applied to it. Allow sufficient air on the bottom cage to allow uniform distribution of the stock.

Top and bottom split-lap preventers should be used on the sheet before the stock enters the calender rolls. Increased weighting on the calender rolls and let-off friction is also required for best lap formation.

The lap weight probably should be held to 28 to 30 lbs. maximum at 12 to 14 oz. per yd. for 100% 3-den. staple because of the bulky nature of

of Improved Acrilan



the fiber. Excessive neppiness may result from overpicking; 30 to 35 beats per inch of two Kirschner beaters is sufficient.

CARDING. Acrilan staple cards readily on flat and roller cards at standard production rates. A fancy is not necessary because the staple gives a normal wire load. Fancies should not be used unless the blend fiber requires it because they may cause excessive neppiness. A 4-hr. stripping cycle is normal at standard production rates; however, some blends may require a more frequent cycle. Keep the cotton card sliver at 55 grains maximum. A light spring tension on the calender rolls helps sliver condensation.

DRAWING. Standard machines of all types give good results. A 1¼- or 1½-in. tube gear is desirable to allow for the bulky nature of the stock. When available the use of spring-bottom cans minimizes this coiling. Sliver weights should be held to 55 gr. maximum.

Two processes of drawing are recommended for blends made before picking. The number of processes for drawing-frame or pin-drafter blends is determined by the amount of blending required; however, three processes are usually sufficient. Keep a slack tension at each process; the crimp in the fiber may obscure uneven web stretching resulting from excessive tension.

ROVING. Standard machines with any drafting elements give good results. Improved Acrilan requires less twist in the roving than the earlier Acrilan fiber required. A twist multiplier of 0.85 to 0.95 for 3-den., 2½-in. staple and 0.95 to 1.05 for 5-den., 2½-in. staple is a good start. Excessive twist in roving should be avoided for best yarn uniformity. The lay gear for Acrilan will be greater than for other fibers.

SPINNING. Long-draft and short-draft spinning produce good yarn if the draft is within the normal range of the machine. Good results of spinnability and yarn strengths have been obtained with a 3.50 twist multiplier for 3-den., 2½-in. and a 3.75 twist multiplier for 5-den., 2½-in. staple. Lower and higher twists can be used for knitted and woven goods to obtain special fabric effects desired

The spinning limit for 3-den., 2½-in. staple is 36/1 cotton number; 15/1 is the maximum yarn number recommended for 5-den., 2½-in. staple. In approaching these maximum yarn numbers, consider a conservative drafting organization and, in some cases, two processes of roving.

Fabric construction dictates the yarn-strength and evenness requirements. Generally, the maximum spinnable yarn number from any given denier should be lowered about 20% for use as a singles warp yarn. The maximum yarn number can usually be woven easily as filling yarn or as a two-ply warp yarn.

SLASHING. Yarns made from 100% Acrilan can be sized with the polyacrylic acid sizes or with combinations of converted starch and polyvinyl alcohol (PVA). The acid solutions require stainless-steel equipment and give some problem of tint fugitivity. Usually, a 6 to 8% polyacrylic acid solution will give sufficient size coating and lay of surface fibers for good weaving.

A sized solution of 12% converted starch and 5% PVA (based on the weight of the solution) has given good results. Some types of starches require a higher concentration because of their lower viscosity. The starch-PVA size has also been used with good results on Acrilan-rayon blends.

Slasher stretch should not exceed 5% and is preferably held at 4% or less. Avoid overdrying the warp. The principle of graduated cylinder temperatures to cool the yarn before it leaves the dry cans should be followed.

WEAVING. Standard loom adjustments and speeds for both box and plain looms give satisfactory results.

Manufacturing Details

(100% Acrilan or Acrilan blends)

BLENDING .... Should be from four or more bales. Make most blends before picking, except cotton (at drawing frame) and wool top (at gill box or pin drafter).

PICKING ..... Use a one-process picker with two or three beaters or a two-process picker. Make a 12- to 14-oz.-per-yd. lap. Lap weight for 100% 3-den. should be no more than 30 lbs.; for blends with viscose, 45 to 55 lbs. High-pressure pneumatic or mechanical let-offs on the lap pin are preferred, but the standard friction-type let-off is satisfactory.

CARDING .... Use either a flat-top or roller card, but no fancy unless the blend requires it. A 4-hr. stripping cycle is sufficient except for unusual blends. Install a spring-pressure device on the calender rolls, and use a 1¼-in. tube gear if available.

Staple length (ins.)	Lickerin speed (rpm.)	Feed plate to lickerin (ins., minimum)	Production (lbs. per hr.) 3-den.	5-den.
1-9/16	375 to 400	0.017	12	not recommended
2	375	0.022	10 to 12	10
2-1/2	375	0.034	8 to 10	8

DRAWING .... Standard four-roll, five-roll, or three-over-four-roll drawing give good results. A 1¼- or 1½-in. tube gear is preferred. Production is 12 to 14 lbs. per hr. per head. Use two processes for blends before picking, two or three for blends at drawing. Synthetic top-roll coverings are used. Sliver weight should not be more than 55 grains.

Roll Settings (ins.)

Four-roll drawing		Three-over-four-roll drawing	
Front to second	S + 1/8	Front to third	S + 3/4
Second to third	S + 5/16	Third to fourth	S + 3/8
Third to fourth	S + 7/16		

ROVING ..... Long-draft or short-draft types are satisfactory. Increase the lay slightly. Production is similar to that for comparable rayon staple lengths and hank rovings. For 10/1, use 1.50- to 1.80-hk. roving; for 20/1, 2.80- to 3.00-hk.; for 30/1, 3.50- to 4.00-hk.

The twist multiplier for 3-den., 2½ in. staple should be 0.85 to 0.95; for 5-den., 2½-in., use 0.95 to 1.05.

Roll Settings (ins.)

Whitin Interdraft
Front to second ..... S + ⅛
Third to fourth ..... S + ½

Whitin double apron
Front to second ..... S + ½
Third to fourth ..... S + ⅝

Saco-Lowell 2-2
Front to second ..... S + ⅝
Second to third ..... S + 9/16

SPINNING .... Long-draft or conventional frames give good results, and productions are the same as for similar rayon yarn numbers.

Staple length (ins.)	*Whitin double apron* Front to second	Second to third	*Saco-Lowell Z-2* Front to second weighted
1-9/16	S + 5/8	S + 1-1/4	S + 3/8
2	S + 9/16	S + 1/2	S + 9/16
2-1/2	S + 1	S + 1/2	S + 1-3/16

Spinning limits

Denier	Length (ins.)	Cotton number	Twist multiplier
3	1-9/16	30/1	3.75
3	2	34/1	3.50
3	2-1/2	36/1	3.50
5	1-9/16	Not recommended	
5	2	12/1	4.00
5	2-1/2	15/1	3.75

SLASHING .... Use either a cotton or rayon slasher; stretch should be 5% maximum, preferably 4%.

For 100% Acrilan, use 6 to 8% (on weight of solution) polyacrylic acid such as Orthocryl-C (25% solids), Goodrite TS 20, or Acrysol A3. The improved Acrilan absorbs less size than earlier staple.

The following size formulas can be used as a guide until more complete data is compiled.

For 50-50 viscose-Acrilan blends or for 100% Acrilan, use 12% (on weight of solution) converted starch such as Nalex 15, K2, or SR gum. Add 5% polyvinyl alcohol (Elvanol 5105).

Can temperature should be graduated, and overdrying should be avoided.

WEAVING .... Relative humidity of 60 to 65% gives good results. Standard box or plain looms are used. Keep looms free of fly.

Ply yarns in medium and heavy constructions do not normally require sizing. Looms should be kept clean to prevent excessive fly accumulation.

DYEING AND FINISHING. Improved Acrilan gives good color value when dyed in a range of shades with acetate, acid, premetallized, and chrome dyestuffs. The range of acetate dyestuffs and fastness properties has shown significant improvement over results obtained on earlier Acrilan.

Raw-stock, package, and piece dyeings are accomplished on standard dyeing equipment. The selection of the dyestuff depends on the blend and the dye effect desired in the finished fabric. Cross-dye effects on viscose and wool blended with Acrilan can be obtained by the selection of appropriate dyestuffs. Union dyeings with viscose and wool in blends present some shade matching and application problems; therefore, evaluation of formulas for each blend should be examined initially on a laboratory basis.

Samples of the improved Acrilan have been submitted to dyestuff companies for evaluation. Through the cooperation of the dyestuff suppliers, much information was developed as to the best types of dyes for earlier Acrilan, and it is expected that this information will be valuable for use on the improved Acrilan since the chemical composition of the fiber has not been changed. The dyestuff companies therefore are in a position to supply valuable dyeing information.

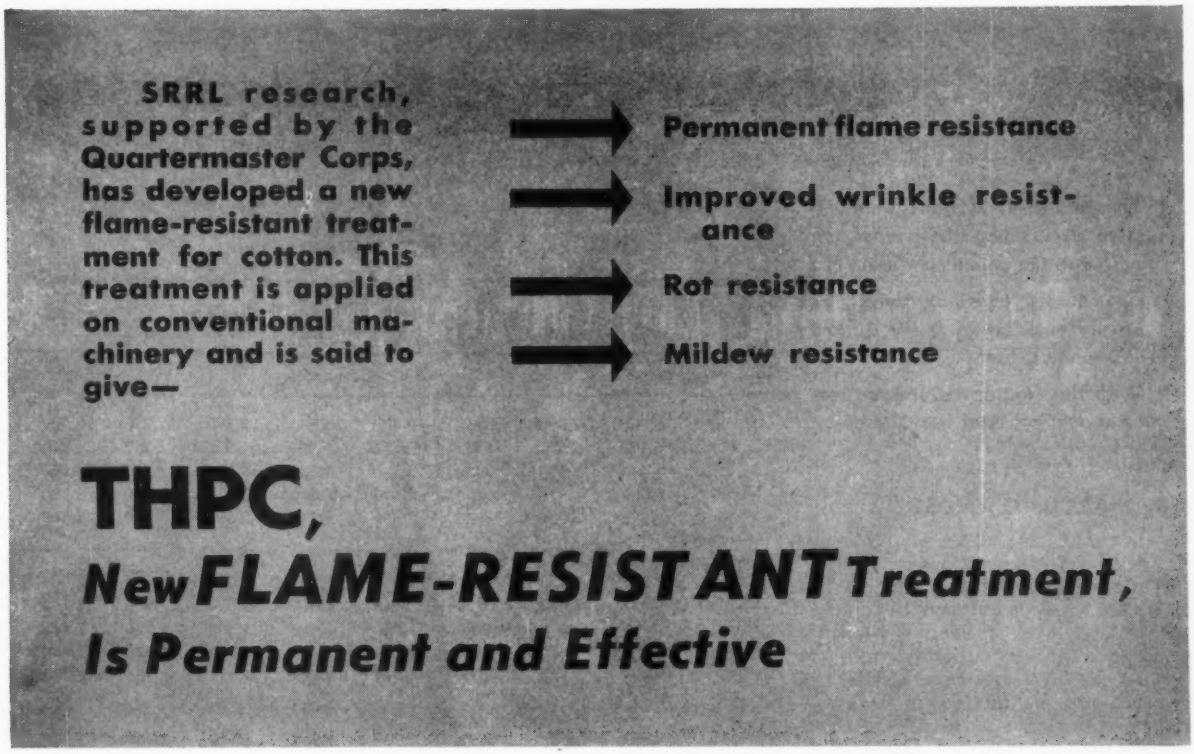
To avoid wrinkles and preserve the fabric hand, the fabric should be preset in the open width at as high a water temperature as possible with the fabric under minimum tension. Excessive warpwise tension or surface pressure should be avoided.

The presetting may tend to set the tint; therefore, fugitivity of tint under these conditions should be checked carefully. The fabric is scoured with a nonionic detergent at 160 to 180° F. for 30 mins. before dyeing is begun.

After dyeing, the bath should be cooled slowly to avoid wrinkles. Scour again with a nonionic detergent and a small amount of alkali. An antistatic agent can be added to the final rinse or padded on the extracted goods if desired.

The fabric should be dried at 220 to 240° F. The curing of resin finishes should be controlled carefully to the minimum requirements of temperature and time to prevent fabric discoloration.

(Specific technical assistance on fiber processing and dyeing and finishing is available to the mill from The Chemstrand Corp. upon request.)


SRRL research, supported by the Quartermaster Corps, has developed a new flame-resistant treatment for cotton. This treatment is applied on conventional machinery and is said to give—
Permanent flame resistance
Improved wrinkle resistance
Rot resistance
Mildew resistance

THPC, New FLAME-RESISTANT Treatment, Is Permanent and Effective

By WILSON A. REEVES and JOHN D. GUTHRIE
* Southern Regional Research Laboratory, New Orleans, La.

FLAME-RESISTANT FINISHES for textiles are needed because of increased demand for safety of textiles. Some of the current methods for applying flame-resistant finishes depend on the use of water-soluble salts that must be renewed after each laundering; other methods are not entirely satisfactory because of adverse effects on fabric properties, high cost, and lack of permanence.

The first lead to the THPC method was obtained during the investigations of the chemical properties of aminized cotton. It was found that tetrakis-(hydroxymethyl) phosphonium chloride would react with and make aminized-cotton fabric flame resistant.

The reaction of THPC and polyfunctional monomeric amines (like melamine) was studied to eliminate the amination step. It was found that permanent flame resistance could be imparted to cotton fabric by treating it with a solution containing THPC, methylolmelamine, and other substances. The THPC polymerizes with the methylolmelamine to form an insoluble resin inside the cotton fibers.

Chemicals Used

A typical resin-forming flameproofing solution contains 15.8% THPC, 9.5% trimethylolmelamine (such as Resloom HP), 9.9% urea, 3% triethanolamine, and 1% wetting agent. The THPC is a crystalline compound soluble in water and in many organic solvents, including alcohols and pyridine. Methylolmelamines may contain from one to six methylol groups, depending on the amount of formaldehyde reacted with the melamine.

Any of these methylolmelamines, and melamine itself, form polymers with THPC; but water solubility and other properties make some more desirable in flameproofing formulations than others. Trimethylolmelamine has been found satisfactory in the typical formulation given. The trimethylolmelamines purchased under different tradenames may differ somewhat in solubility or other properties. Methylol ureas can be substituted for the methylolmelamine, but modifications must be made in formulations and processing.

During polymerization, hydrochloric acid is split out of the THPC molecule. Hence, urea is employed in the formulation primarily to tie up this free acid formed during the curing operation to protect the cotton from acid tendering.

The minimum amount of urea needed to prevent acid tendering is associated with the amount of THPC used, but it is difficult to calculate the proper amount because some of the urea actually reacts with THPC to become part of the polymer and some of it decomposes during the high-temperature cure.

The effect of varying the concentration of urea in the typical formulation was determined by curing the resin in 8-oz. twill.

Fabric treated with resin-forming solutions containing no urea picked up only about 12% resin and was tendered. At 10% urea, the resin pickup increased to about 17% and there was little loss in tear strength. Twenty-five percent of urea prevented tendering but interfered with the polymerization of THPC and methylolmelamine and resulted in only about a 5% resin deposit in the fabric. Experiments have indicated that the use of about 7.5% urea, instead of the 9.9% given in the typical formula, will give somewhat better permanence to laundering with soap and soda.

Triethanolamine is use to stabilize the resin-forming solution at room temperature. Less than 1% of tri-

CONTINUED ON PAGE 176

* *One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Service, U. S. Department of Agriculture.*

Constants Speed Calculations for

- **These tables of constants were calculated by dividing the pounds per spindle into the pounds of roving fed**
- **The proper constant times the hours-per-week run gives the elapsed roving-running time**
- **With this figure, the average roving run-outs are easily calculated**

By MARCUS C. GROSS

THESE TABLES ARE INTENDED to replace tables of constants based on a given work week in hours or the surface speed delivery of the back rolls.

To get the average running time of roving, just multiply the proper constant by the hours per week. The constants were calculated by dividing the pounds per spindle into the pounds of roving fed. If you need additional constants, all you have to know is the weight of the roving, single or doubled, and the pounds per spindle based on frame efficiency.

Here is an example of how to use the constants:

A mill is spinning yarn from double roving on 10-oz. bobbins. The pounds per spindle bobbin is 1.2 lbs. in this mill.

In the table for double roving, the constant for this combination is 1.04. The 1.2 lbs. is located down the left-hand column, and the 10 oz. (or 1.25 lbs.) is located across the top. The constant is located where the row and the column meet.

If the mill is running a 45-hr. week, the elapsed running time of the roving is 1.04x45 = 46.8 hrs.

To calculate the average run-outs per side per week for a 200-spindle frame, first find the running time in minutes:

$$46.8 \times 60 = 2{,}808 \text{ mins.}$$

Next calculate the average time of roving changes:

$$\frac{2{,}808}{200} = 14.04 \text{ mins.}$$

Now the roving run-outs per 45-hr. week are:

$$\frac{45 \times 60}{14.04} = 192 \text{ \# run-outs}$$

If you run single roving, calculate run-outs in the same way with the table for single-roving constants.

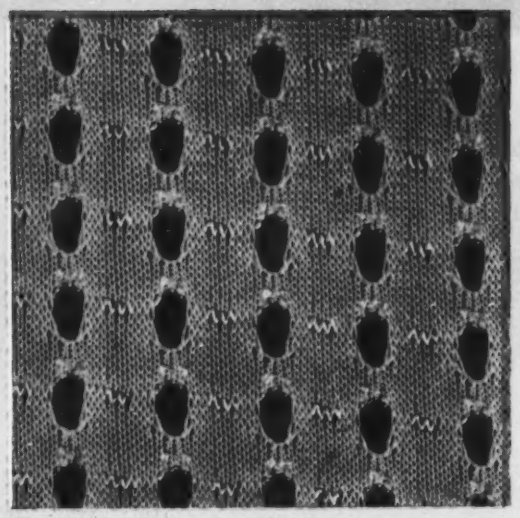
Single Roving Fed

Oz.	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00
Lbs.	.625	.750	.875	1.000	1.125	1.250	1.375	1.500
Lbs. per spindle	Constants							
.1	6.250	7.500	8.750	10.000	11.250	12.500	13.750	15.000
.2	3.125	3.750	4.375	5.000	5.625	6.250	6.875	7.500
.3	2.080	2.500	2.920	3.330	3.750	4.160	4.580	5.000
.4	1.560	1.875	2.190	2.500	2.810	3.125	3.440	3.750
.5	1.250	1.500	1.750	2.000	2.250	2.500	2.750	3.000
.6	1.040	1.250	1.460	1.660	1.880	2.080	2.290	2.500
.7	.893	1.070	1.250	1.430	1.610	1.800	1.960	2.140
.8	.781	.938	1.090	1.250	1.410	1.560	1.720	1.875
.9	.694	.833	.972	1.110	1.250	1.390	1.530	1.660
1.0	.625	.750	.875	1.000	1.125	1.250	1.375	1.500
1.1	.568	.682	.795	.909	1.020	1.140	1.250	1.360
1.2	.521	.625	.729	.833	.938	1.040	1.150	1.250
1.3	.481	.577	.673	.770	.865	.961	1.060	1.150
1.4	.446	.536	.625	.714	.804	.893	.982	1.070
1.5	.417	.500	.580	.666	.750	.833	.917	1.000
1.6	.391	.469	.547	.625	.703	.781	.859	.937
1.7	.368	.441	.515	.588	.662	.735	.809	.882
1.8	.347	.417	.486	.555	.625	.694	.764	.833
1.9	.329	.395	.461	.526	.592	.658	.724	.789
2.0	.3125	.375	.438	.500	.563	.625	.688	.750
2.1	.298	.357	.417	.476	.536	.595	.655	.714
2.2	.284	.341	.398	.455	.511	.568	.625	.682
2.3	.272	.326	.380	.435	.489	.543	.598	.652
2.4	.260	.312	.365	.417	.469	.521	.573	.625
2.5	.250	.300	.350	.400	.450	.500	.550	.600
2.6	.240	.288	.337	.385	.433	.481	.528	.577
2.7	.231	.278	.324	.370	.417	.463	.509	.556
2.8	.223	.268	.313	.357	.401	.446	.491	.536
2.9	.216	.258	.302	.345	.388	.431	.474	.517
3.0	.208	.250	.292	.333	.375	.416	.458	.500
3.1	.202	.242	.282	.323	.363	.403	.444	.484
3.2	.195	.234	.273	.313	.351	.391	.430	.469
3.3	.189	.227	.265	.303	.341	.379	.417	.454
3.4	.184	.221	.257	.294	.331	.368	.404	.441
3.5	.179	.214	.250	.286	.321	.357	.393	.429
3.6	.174	.208	.243	.278	.313	.347	.382	.417
3.7	.169	.203	.236	.270	.304	.338	.372	.405
3.8	.164	.197	.230	.263	.296	.329	.362	.395
3.9	.160	.192	.224	.256	.288	.321	.353	.385
4.0	.156	.188	.219	.250	.281	.313	.344	.375

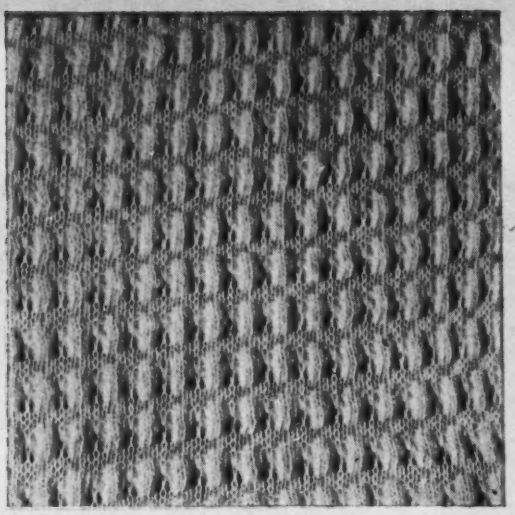
Average ROVING RUN-OUTS

Double Roving Fed

Oz.	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00
Lbs.	.50	.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
Lbs. per spindle	Constants										
.1	5.000	7.500	10.000	12.500	15.000	17.500	20.000	22.500	25.000	27.500	30.000
.2	2.500	3.750	5.000	6.250	7.500	8.750	10.000	11.250	12.500	13.750	15.000
.3	1.660	2.500	3.330	4.160	5.000	5.830	6.660	7.500	8.330	9.166	10.000
.4	1.250	1.875	2.500	3.125	3.750	4.375	5.000	5.625	6.250	6.875	7.500
.5	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000
.6	.833	1.250	1.660	2.080	2.500	2.920	3.330	3.750	4.160	4.580	5.000
.7	.714	1.070	1.430	1.800	2.140	2.500	2.860	3.210	3.570	3.930	4.290
.8	.625	.938	1.250	1.560	1.875	2.125	2.500	2.810	3.125	3.440	3.750
.9	.555	.833	1.110	1.390	1.660	1.940	2.220	2.500	2.780	3.060	3.330
1.0	.500	.750	1.000	1.250	1.500	1.750	2.000	2.250	2.500	2.750	3.000
1.1	.454	.682	.909	1.140	1.360	1.590	1.820	2.040	2.270	2.500	2.730
1.2	.417	.625	.833	1.040	1.250	1.460	1.660	1.870	2.080	2.290	2.500
1.3	.385	.577	.770	.961	1.150	1.350	1.540	1.730	1.920	2.120	2.310
1.4	.357	.536	.714	.893	1.070	1.250	1.430	1.610	1.790	1.960	2.140
1.5	.333	.500	.666	.833	1.000	1.170	1.330	1.500	1.660	1.830	2.000
1.6	.312	.469	.625	.781	.937	1.090	1.250	1.410	1.560	1.720	1.880
1.7	.294	.441	.588	.735	.882	1.030	1.180	1.320	1.470	1.620	1.760
1.8	.277	.417	.555	.694	.833	.972	1.110	1.250	1.390	1.530	1.670
1.9	.263	.395	.526	.658	.789	.921	1.050	1.180	1.320	1.450	1.580
2.0	.250	.375	.500	.625	.750	.875	1.000	1.125	1.250	1.380	1.500
2.1	.238	.357	.476	.595	.714	.833	.952	1.070	1.190	1.310	1.430
2.2	.227	.341	.455	.568	.682	.795	.909	1.020	1.140	1.250	1.360
2.3	.217	.326	.435	.543	.652	.761	.870	.978	1.090	1.200	1.300
2.4	.208	.312	.417	.521	.625	.729	.833	.938	1.040	1.150	1.250
2.5	.200	.300	.400	.500	.600	.700	.800	.900	1.000	1.100	1.200
2.6	.192	.288	.385	.481	.577	.673	.769	.865	.962	1.060	1.150
2.7	.185	.278	.370	.463	.556	.648	.741	.833	.926	1.020	1.110
2.8	.179	.268	.357	.446	.536	.625	.714	.804	.893	.982	1.070
2.9	.173	.258	.345	.431	.517	.603	.690	.776	.862	.948	1.030
3.0	.166	.250	.333	.416	.500	.583	.666	.750	.833	.916	1.000
3.1	.161	.242	.323	.403	.484	.565	.645	.726	.807	.887	.968
3.2	.156	.234	.313	.391	.469	.547	.625	.703	.781	.859	.938
3.3	.152	.227	.303	.379	.454	.530	.606	.682	.758	.833	.909
3.4	.147	.221	.294	.368	.441	.515	.588	.662	.735	.809	.882
3.5	.143	.214	.286	.357	.429	.500	.571	.643	.714	.786	.857
3.6	.139	.208	.278	.347	.417	.486	.556	.625	.694	.764	.833
3.7	.135	.203	.270	.338	.405	.473	.541	.608	.676	.743	.811
3.8	.132	.197	.263	.329	.395	.461	.526	.592	.658	.724	.789
3.9	.128	.192	.256	.321	.385	.449	.513	.577	.641	.705	.769
4.0	.125	.188	.250	.313	.375	.438	.500	.563	.625	.688	.750



ALL-OVER EYELET cloth is made with notched pressers, high- and low-needle butts, and special sinkers. A bright rayon yarn can be used on one feed.



BLISTER EFFECT was produced with the pressers arranged with three plain and one notched presser. Presser cams on eight consecutive feeds were high cut.

Spark Your Sales With Fancy Spring-Needle JERSEYS

▶ **Pile fabrics, open-work designs, tuck designs, and rubber swim-wear fabrics can be made on spring-needle sinker-top machines**

▶ **Here are the details on five such sales-sparking fabric types: fancy eyelet, plain eyelet, blister, elastic, and twill**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

COMPETITION FROM TRICOT MACHINES and multifeed latch-needle machines has caused many plain spring-needle sinker-top machines to be converted to produce fancy fabrics.

Among these conversions are presser wheels to make press-off open-work fabrics; tuck pressers to make raised tuck designs; special sinkers to produce plaited work; special thread guides to make pile fabrics; and needles and cams to make rubber inlaid fabrics.

The openwork fabrics are used for men's and women's underwear and could be used for golf shirts and other sports clothes. On 28-cut machines, 36s cotton or 150-den. rayon yarns may be used. A combination of bright and dull rayon provides pleasant effects.

Fancy Eyelet Cloth Is Made With Pattern Wheels

Fancy eyelet cloth can be made with wheels that act on the backs of certain needles. The wheels are used at feeds where no yarn is fed to the needles. The needle beard is not pressed where a jack is omitted from a slot in the wheel.

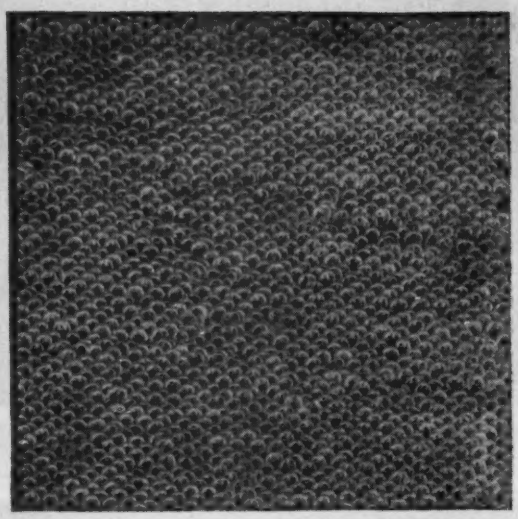
A jack in the slot pushes the needle forward to be pressed to cast off its loop. Needles opposite the jackless slots retain their loops.

Designs are worked out in a manner similar to normal tuck-stitch pattern-wheel designs. The pattern width depends on the number of slots in each pattern wheel and the number of needles in the cylinder. The pattern depth depends upon the number of cast-off feeds on the machine.

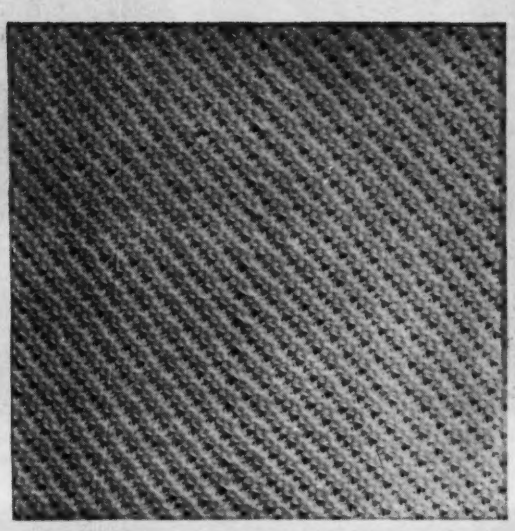
How Plain Eyelets Are Made With Notched Pressers

All-over eyelet cloths can be made with high-and-low-cut presser cams and notched pressers. The plain cams press all needles while the high-and-low cut presser cams work on their appropriate notched pressers.

Two courses are made tight and one course loose before the cast-off feed to prevent the cast-off loops from running. High- and low-butt needles are arranged according to the spacing of the holes required. Special sinkers are arranged with the needles to assist in loop formation.



PILE FABRICS can be made with the needles and cam arranged to cause the needles to tuck and float at odd feeds and knit at even feeds.



TWILL EFFECTS are made on a tuck-float principle. This fabric was made with the presser cams and the pressers arranged two high and two low.

Here is a typical setup for an eyelet cloth:

Sinkers	7	8	8	7	R	R	7	8	8
Needles	L	L	L	S	S	S	L	L	L
Pressers	H	P	H	P	P	P	C	C	C

7=No. 79 Ives sinkers
R=Regular S-20 sinkers
S=Short-butt needles
C=Low-cut pressers
8=No. 80 Ives sinkers
L=Long-butt needles
H=High-cut pressers
P=Plain pressers

Feed No. 1—Fit plain presser cam. Float short-butt needles. Knit long-butt needles. Slacken stitch.

Feed No. 2—Fit low-cut presser cam. Float short-butt needles. Raise long-butt needles. Feed no yarn.

Feed No. 3—Fit plain presser cam. Knit on all needles.

Feeds No. 4 and 5—Fit high-cut presser cam. Knit on all needles.

Feeds No. 6, 7, 8 and 9—Fit plain presser cam. Knit on all needles.

Feeds No. 11 and 12—Fit plain presser cam. Knit on all needles. Tighten stitch.

Blister Patterns Are Made With Notched Pressers

Other raised, tuck, or blister patterns for outerwear garments can be made with notched pressers. The needles are arranged to knit at all feeds. The pressers can be arranged with three plain pressers and one high-cut presser. The presser cams on feeds

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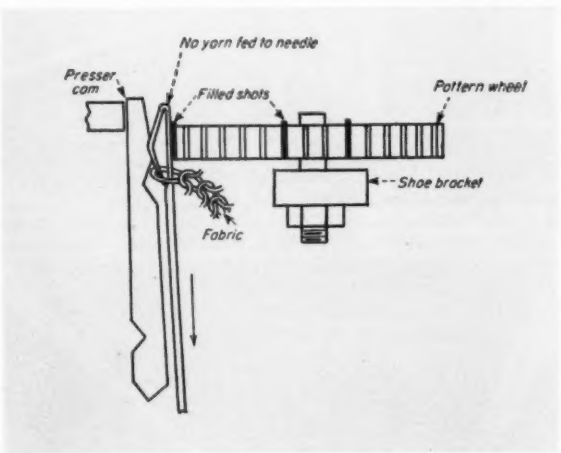
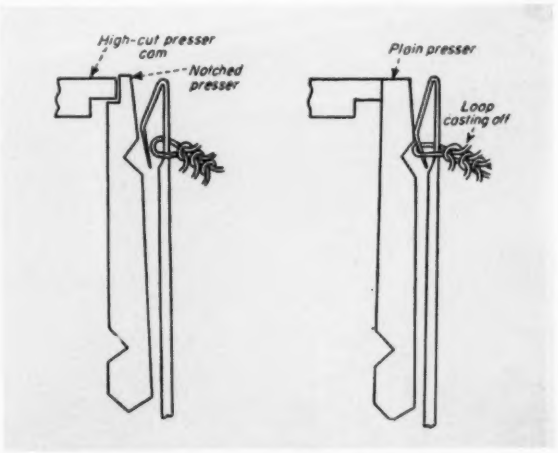


PATTERN WHEEL selects certain needles to be pushed forward to allow these needles to cast off their loops to form open-work patterns.



NOTCHED PRESSERS are used to obtain all-over open effects. The needles opposite notched pressers retain loops when no yarn is fed.

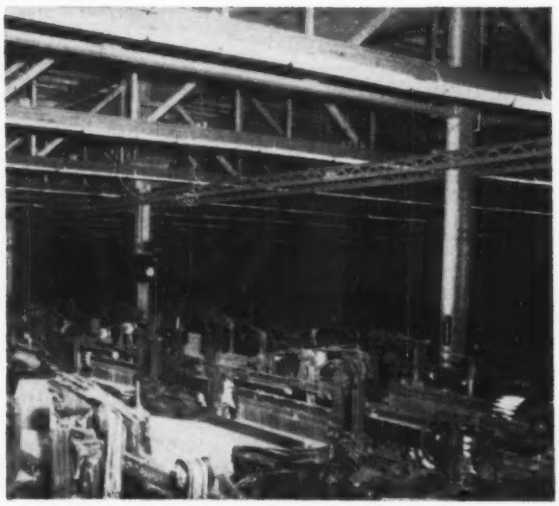
PACOLET'S NEW BUILDING, connected to the old plant, makes a striking contrast with the multistory structure.

Pacolet's New Air-Conditioned WEAVE ROOM

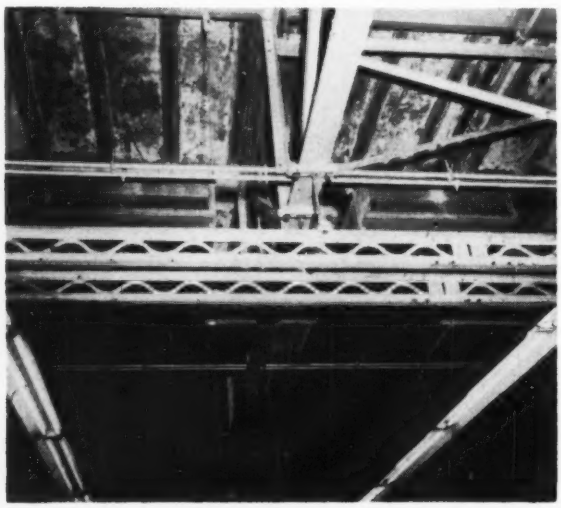
▶ Better control over humidity and temperature is paying off in better weaving at Pacolet No. 6's new weave room. Starting at the ground, Pacolet planned and built an almost "fault-free" room for weaving.

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

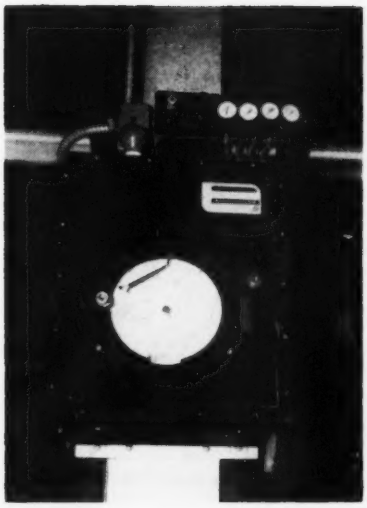
THE ADVANTAGES OF controlled-air systems for weave rooms stand out clearly at Pacolet Mfg. Co.'s new weave room in the No. 6 mill at Gainesville, Ga. Since the mill building and the controlled-air system were designed in correlation with each other, faults common in many air-



ONE ROW OF COLUMNS is all that is needed to support the weaveroom roof. Air ducts are located between the roof trusses.



ATOMIZERS are mounted directly in front of the air-duct openings. The MonoRail system is suspended from the trusses.



THIS ROOM CONTROL STATION, one of 12 located all over the weave room, keeps the humidity at 85% and temperature at 80° F.

BAFFLE SPRAYS, a new feature, keep the baffles clean and prevent lint from collecting on the plates.

ENDLESS-BELT STRAINER, installed on each washer, collects the lint from the water and dumps it into a collecting basket.

conditioned weave rooms have been completely eliminated.

Fabrics woven in the new weave room are cotton twills 40 ins. wide, 86x92, in 2.55 yds. per lb. weight; and cotton twills 39 ins. wide, 68x76, in 4.2 yds. per lb. weight. The cloth is woven on 452 X-2 looms operating at 175 and 184 ppm. and on 148 X-model looms at 184 ppm.

Loom Stops Are Fewer With Air Conditioning

The windowless 118x350-ft. one-story building contains two Carrier 75,600-cu.-ft.-per-min. units to control the atmosphere over an area of 41,300 sq. ft. of floor space. Two smaller units were installed rather than one large one to reduce the number of air ducts.

The automatically controlled units are designed to maintain 85% r.h., ± 2½%, at the control instruments. Cold-weather temperature can be held constantly at 80° F.

Variation of the relative humidity and temperature is only a small amount in any part of the weave room, and actual operation of the two units has produced an average relative-humidity reading of 86% and a temperature of 80° F. throughout the room.

Because of the number and types of looms and the different fabrics woven, it is impossible to make an efficiency and quality comparison between the new weave room and other similar weave rooms at Pacolet not air conditioned, but the controlled-air system has resulted in high-quality cloths at high operating efficiency with greater comfort to employees.

Here is some concrete evidence of improved operating conditions in the new weave room:

1. There are fewer mechanical stops, such as slamming off and knocking out pieces of filling.

2. Yarn holds its conditioning better.

3. Machinery can be more easily put back in operation after shutdowns.

Each of the two 75,600-cu.-ft.-per-min.-capacity units of the evaporative cooling system has an 80¾-in. single-width, Limit-Load fan operated by a 40-hp. squirrel-cage motor.

Two humidifiers, 8x12x13 ft., are designed to serve as dehumidifiers if refrigeration is added to the system later.

The system contains 106 No. 6 and 108 No. 9 atomizers.

THIS REMOVABLE BASKET is taken from the endless-belt strainer and cleaned once each day. The employee simply lifts out the basket.

COLD-WEATHER TEMPERATURE is held at 80° F. by this automatic steam-pressure reducing station that regulates the water-bath temperature.

Thermostat and Hygrostat Stations Control the Air

Two of the 12 room control stations are equipped with thermostatic controls to regulate the reheat coil in the apparatus room in addition to straight hygrostatic stations to control the atmosphere. The other 10 stations are straight hygrostatic stations.

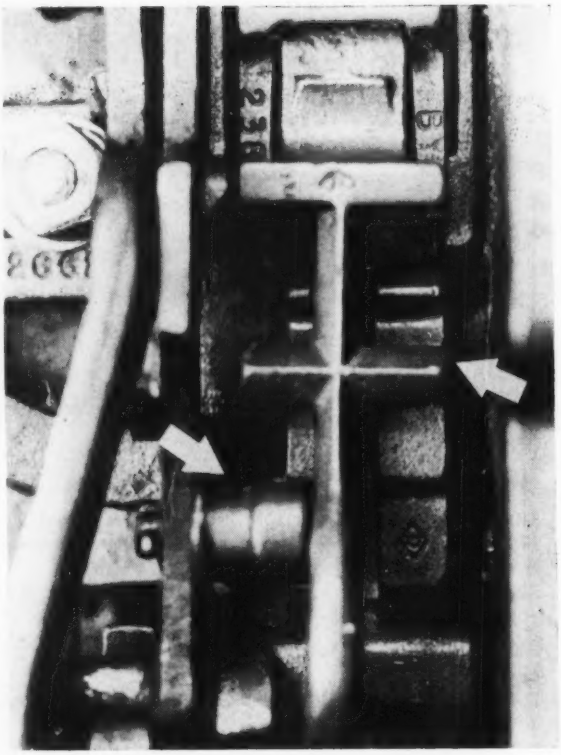
Minneapolis-Honeywell control instruments are installed at strategic

CONTINUED ON PAGE 233

Increase Loom Production Up to 5% *With* LIZARDS

► Loom stops from filling breaks can be eliminated on many types of cotton cloth if the filling-fork lizards are put to work. You will get mispicks in the cloth, but on many materials that doesn't matter greatly. What does matter, though, is that you can increase your weave-room production up to 5% by using your lizards wisely.

By W. C. WESTBROOK
Consulting Editor, TEXTILE WORLD



THE LIZARD rests in the first notch of the filling-fork slide—the shallow one—while the loom is running normally. The lizard arm is resting in front of the filling-motion shipper arm.

HIGHER WEAVE-ROOM PRODUCTION results on certain types of cotton cloths (plain cloths such as linings, backing materials, bag goods, etc.) woven on side-fork cam looms if the filling feeler is disconnected and filling transfers are indicated by the filling-motion hook.

Of course, there will be cloth defects such as mispicks, double picks, and jerk-backs when looms are run with filling feelers disconnected; but in several types of fabrics, these defects don't lower the value of the cloth.

Weavers Do Less Work And Can Tend More Looms

Since about half the loom stops on average weaves are caused by broken filling, a lot of work is taken out of weavers' jobs if the filling fork causes the loom to transfer the filling at filling breaks rather than stop the loom. The result is that weavers have less work to do per loom and can tend almost twice as many looms. By eliminating loom stops at broken filling, weave-room production is often increased as much as 5%.

Another advantage in weaving cloth without using filling feelers (nonfeeler operation) is the saving in bunch waste or bobbin strips. About 6 to 8 yds. of filling yarn is left on each bobbin when looms are operated with a filling feeler, and this yarn goes into yarn waste.

A slight increase in spinning-frame production also results when a bunch does not have to be built on each bobbin.

There is also a saving in labor when bobbin strips do not have to be removed from the bobbins. Bobbins removed from looms transferring filling from the fork are clean and ready to be used again.

If a given fabric must have most of the qualities of strict feeler-woven goods, you can still have the loom-stoppage advantages of nonfeeler operation by using both the filling feeler and the filling fork. This is the "double-change" method.

When this method is used, the normal run-out of filling is handled by the filling feeler in the usual manner; but when the filling feeler fails to operate or the filling breaks, the filling fork takes over and causes the bobbin transfer without loom stoppage. To change a side-fork loom from straight feeler operation to double-change operation, simply turn the straddle bug upside down.

The Lizard Is in Effect A Small Safety Device

Since the loom will not stop when the filling breaks or runs out on looms being operated either as nonfeeler or double change, there must be some way to stop the loom when a shuttle does not box correctly and causes the transfer latch to miss the bunter with the result that a full bobbin of filling is not transferred into the loom. To prevent the continued operation of the loom without filling being inserted into the shed, the filling-motion trip is used.

Because the filling-motion looks like a lizard and has actions similar to those of a lizard, most loomfixers call it a lizard. They also speak of its movements as "making the lizard crawl."

If a loom is in good condition generally and all filling-motion parts are correctly timed and set, the lizard will function properly. However, if the settings are just a little off, the lizard will not give satisfactory results.

Here's the way the lizard works:

1. While the loom is running normally, the lugs on the lizard rest in the front notches of the filling-fork slide.

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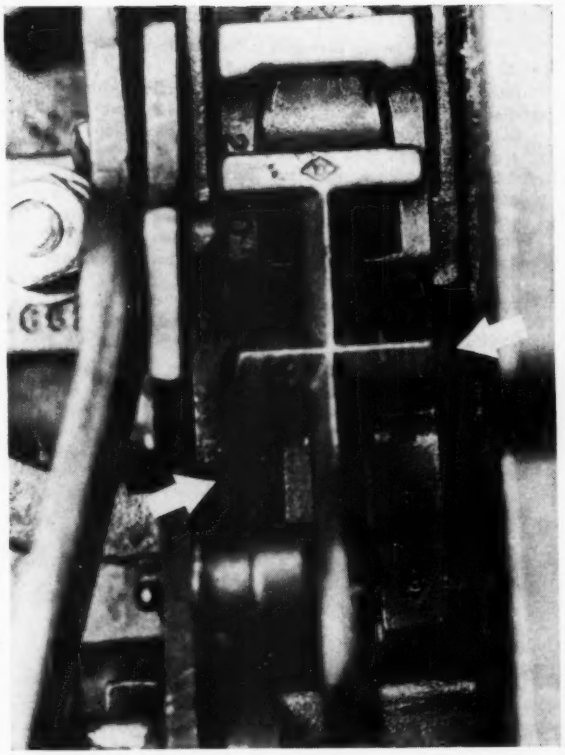
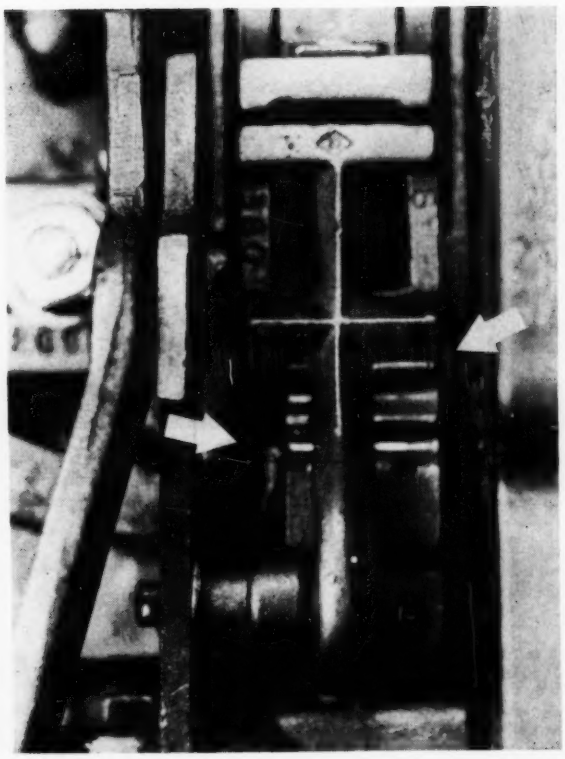
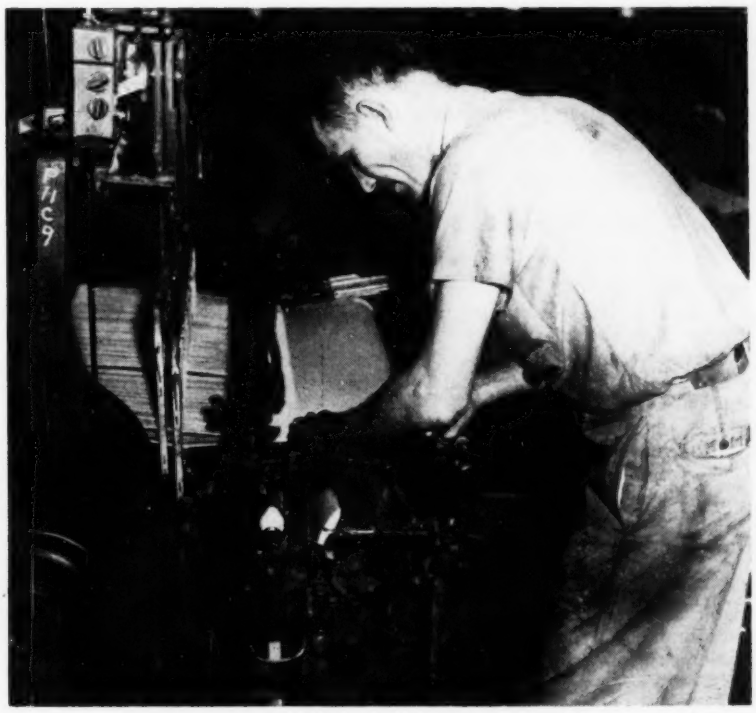


BROKEN FILLING or run-out filling causes the lizard to move to the second notch of the slide on the first left-hand pick. The lizard is now resting on top of the filling-motion shipper arm.

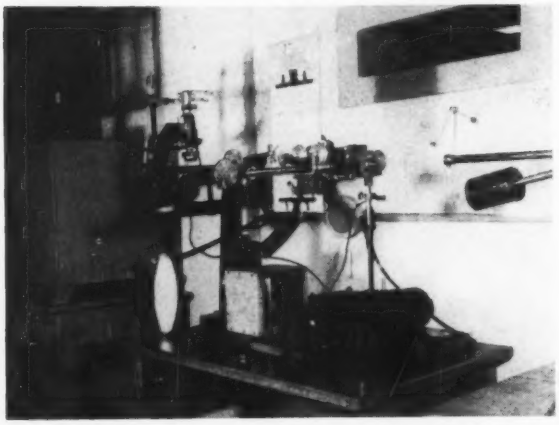


INCOMPLETE TRANSFERS cause the lizard to crawl to the third notch of the slide—the deep one—on the second left-hand pick. The lizard arm is now behind the shipper arm ready to stop the loom.

ONLY 10 SECS. are needed to check lizards for operating condition. On narrow looms, supervisors can quickly check all their looms without stopping them by using both hands.



LOOM MAINTENANCE in general can be determined by how well loomfixers keep their lizards operating. To operate correctly, lizards must be set properly with lost motion eliminated.



IP-2 TESTER was modified with a twist head and pendulum to give contraction data as well as a stress-strain chart. The microscope was mounted in order to measure both yarn diameter and helical angle.

What Is Contraction?

There still remains confusion in the textile industry over the terms "contraction," "take-up," and "crimp." Some technicians use take-up and crimp in connection with the change in length during twisting. The terms are used erroneously to describe contraction, which is calculated on a different basis than is used for crimp.

Generally speaking, the terms "take-up" and "crimp" are confined to fabrics to describe the change in length of a yarn caused by weaving. Contraction is used to describe the change in length in yarns resulting from twist.

Contraction is usually expressed as the percent change in length based on the original untwisted length of the material.

$$\text{Percent contraction} = \frac{\text{Original length} - \text{final length}}{\text{Original Length}} \times 100$$

In ring twisting or staple-fiber spinning, the original length is the length delivered from the front roll. The final length is the length after twisting or the length wound on the bobbin.

In a woven fabric, the original length refers to the length of the yarn before weaving, and the final length is the length of the yarn in the fabric.

New THROWING Formulas Predict Effect of Twist on Filament Yarns

- **Twist contraction can now be determined more accurately for production and fabric calculations**
- **Processing tensions can be better set with new information on the effect of twist on elastic limit**
- **Graphs and formulas, which can be easily changed to conform with local conditions, are given for continuous-filament:**

  • Nylon • Orlon • Dacron • Acetate • Viscose

By D. S. HAMBY and E. B. GROVER, School of Textiles, N. C. State College

A STUDY OF THE INFLUENCE of twist on the different properties of continuous-filament Orlon, Dacron, nylon, viscose, and acetate yarns at the School of Textiles, N. C. State College, has resulted in formulated relationships between twist and contraction and twist and elastic limit.

The formulas given here and Figs. 6, 7, 8, 9, and 10 can be used with confidence to predict the expected contraction in twisting. If the operating techniques of a throwing plant give results that deviate from the established relationships, new graphs and formulas can be easily determined for the particular mill.

The authors are indebted to Kare Kragas, a graduate student, for performing the tests and collecting the data for this study.

In addition to the contraction data, the effects of twist on the elastic limit of viscose and acetate yarns were studied. As shown in Figs. 1 and 2, twist has a pronounced effect on the elastic limits of these yarns. Since the elastic limit is one of the prime factors to consider in establishing processing tensions, the effect of twist on the elastic limit should be considered in establishing the best tension to use.

Contraction and Twist Affect Production and Fabric Weights

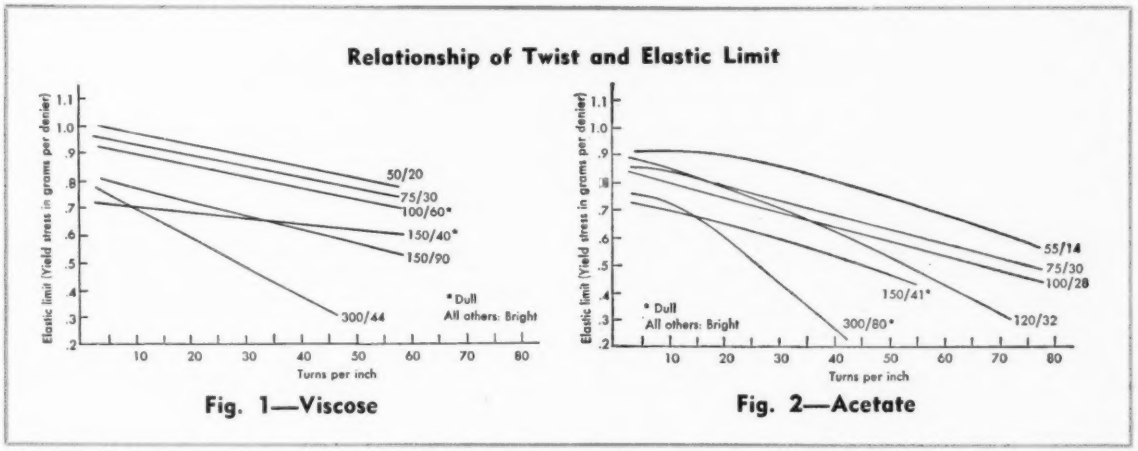
In continuous-filament throwing, twist and contraction are of prime importance. The denier or weight of the yarn is changed in twisting, and this change affects machine production and finished-fabric weight.

On uptwisters, the rate of production is determined by the speed of the cork roll, which drives the take-up package. Since the yarn is twisted before it is wound on the package, it is necessary to have an accurate way to figure the contraction that results from the twist. If contraction values for every yarn are not available, the production-control department cannot determine the rate of production and the fabric-design department cannot calculate the weights of finished fabric.

In addition to the relationship of twist and contraction, the designer of industrial fabrics needs to know the effect of twist on the stress-strain relationships of each yarn.

How To Correct for Local Conditions

The simplest approach to correcting a graph for local conditions is to establish a single new point. For example: Fig. 9 (150-den., 40-filament viscose) shows that at 30 tpi. the contraction is 5%. Suppose that a mill finds that at 30 tpi. its 150-den. viscose (perhaps from a different manufacturer and with a different filament number) contracts 6%. Then a new line can be drawn parallel to the established line—at the point where a line projected from the 6% mark crosses a line projected straight up from the 30-tpi. mark. This example is illustrated in Fig. 4. If more than one point is estab-



TWIST AND ELASTIC-LIMITS GRAPHS show that twist has a pronounced effect on the elastic limits of viscose and acetate yarns. These graphs provide information that can be used in establishing the best tension to use in processing these yarns.

Formulas for Finding the Contraction of Continuous-Filament Yarns During Twisting

y = percent contraction
D = denier of yarn
T = turns per inch

VISCOSE
$y = (0.56 \times 10^{-4})\ (D)\ (T^{1.87})$

ACETATE
$y = (1.23 \times 10^{-4})\ (D)\ (T^{1.70})$

NYLON
$y = (1.00 \times 10^{-4})\ (D)\ (T^{1.91})$

ORLON
$y = (1.30 \times 10^{-4})\ (D)\ (T^{1.80})$

DACRON
$y = (0.72 \times 10^{-4})\ (D)\ (T^{1.95})$

lished, a new formula can be calculated.

Then the mill can use the new line to determine expected contractions from the 150-den. viscose filament it uses.

How the Study Was Made

Our first approach to the problem was to use mill equipment. The first experimenting was done by twisting samples of nylon on an upstroke twister. The problems that developed were:

1. The majority of experiments could not be controlled with a predetermined tension during twisting. Attempts to control the operating tension with modified flyers met with little success. Spindle-speed changes threw production rates out of normal range; so the advantage of duplicating mill procedures was partially lost.

2. The higher-twist yarn had to be

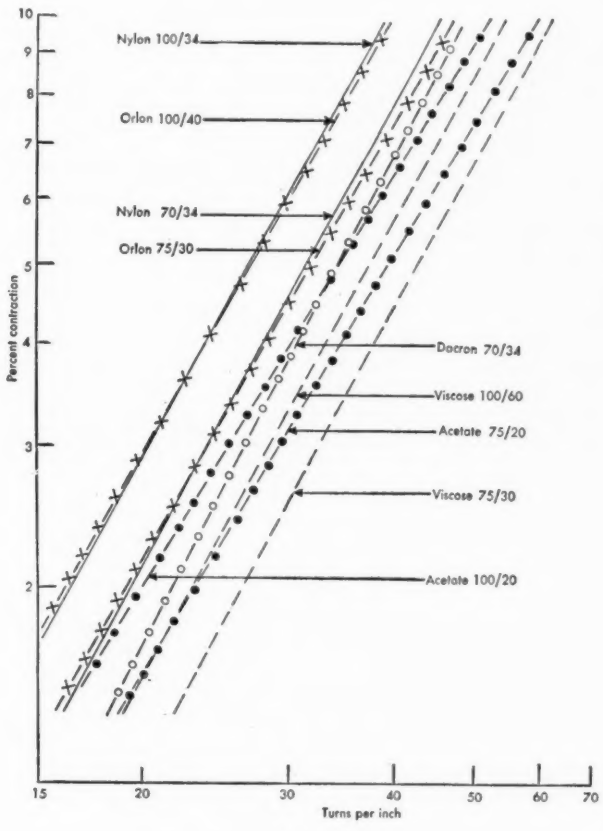


Fig. 3.

STRAIGHT-LINE RELATIONSHIPS, on a logarithmic basis, make the formulas simple. Formulas for finding contraction during twisting were calculated from these test results.

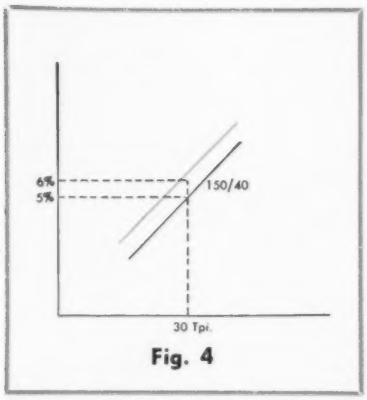


Fig. 4

TO FIT LOCAL CONDITIONS, the twist and contraction graph can be adapted by establishing only one point for the new line. The new line (red) is then drawn parallel to the old line (black). In this example, the throwing plant is getting 6% contraction at 30 tpi. instead of 5% on 150/40 viscose yarn.

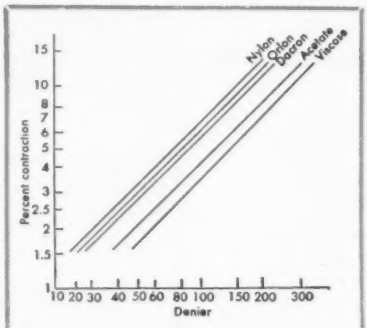


Fig. 5
Relationship of Denier and Contraction at 30 Turns per In.

DENIER AND CONTRACTION GRAPH shows the same straight-line relationship as between contraction and twist. Similar graphs can be plotted for any turns-per-inch standard from the formulas to get the effect of denier on contraction.

set to insure proper handling. This conditioning changed the apparent contraction.

3. Yarn left on twister packages relaxed, and this relaxation varied with time. As a result, all packages had to be tested after a definite period, and this requirement was bothersome for practical testing.

This issue was raised: Is it better to process the yarn on industrial equipment, with this fact as the only advantage, or would it be preferable to devise a controlled laboratory method? In view of the variables introduced by the use of mill equipment, the laboratory approach was adopted.

The Experimental Procedure

A Scott IP-2 testing machine was modified so we could make a series of tests on each sample. We built a pretensioning device with an 8-in. pendu-

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Relationship of Twist and Contraction

TWIST AND CONTRACTION GRAPH for each type of continuous-filament yarn can be used with confidence to predict the expected contraction from twisting the yarns. If the operating conditions in a mill give different results, the graphs can be easily converted to the local conditions.

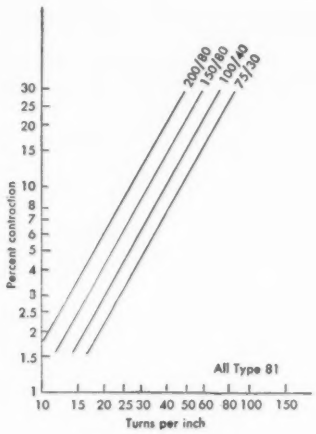


Fig. 6—Orlon

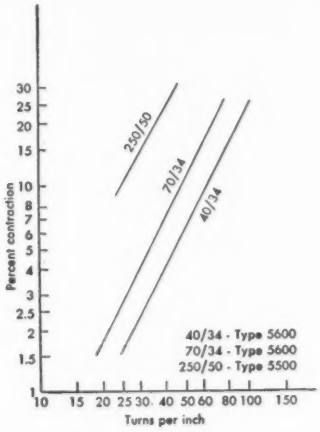


Fig. 7—Dacron

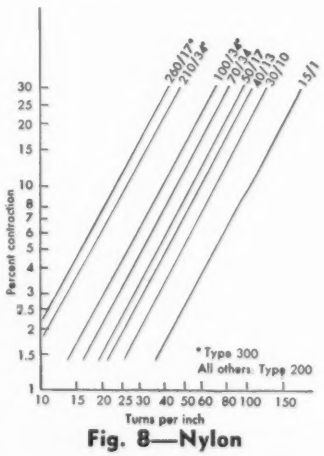


Fig. 8—Nylon

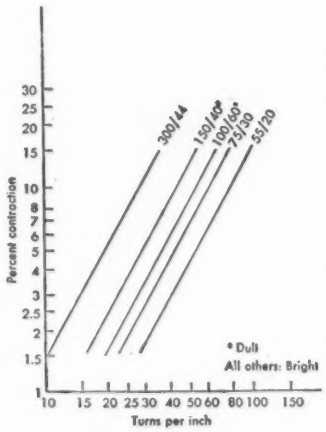


Fig. 9—Viscose

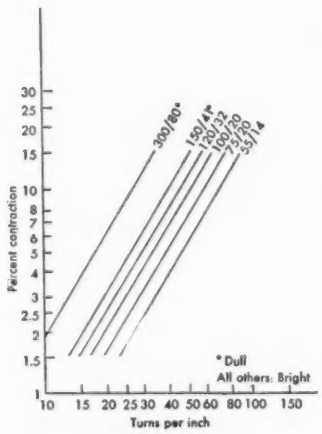


Fig. 10—Acetate

Castle Creek's SCREEN PRINTING Goes Modern

NEW EIGHT-COLOR PRINTING MACHINE, one of the first in the U.S., is in operation at Castle Creek Prints, Inc., Washington, N.J. Linen table cloths supply the bulk of work on this machine.

New techniques developed at Castle Creek Prints, Inc., make screen printing a more-exact and faster operation.

Tacking of cloth to the printing table and drying of prints are no longer bottlenecks. Castle Creek—

- **Uses adhesive-wax table tops**
- **Uses a portable dryer**
- **Runs long lots on an automatic machine**

By GEORGE M. MOISSON

SILK-SCREEN PRINTING METHODS have long been the target of criticism, the usual questions being "Why is it still an old-fashioned hand operation? Can't it be mechanized so that it can be done automatically?"

The answer is in the nature of the prints. The size of a repeat, sometimes as much as 115 ins., cannot be run on a roller printing machine. The color combinations expected by the customer cannot always be obtained on rollers. Thus, screen printing must remain—at least in its most artistic form—a hand operation.

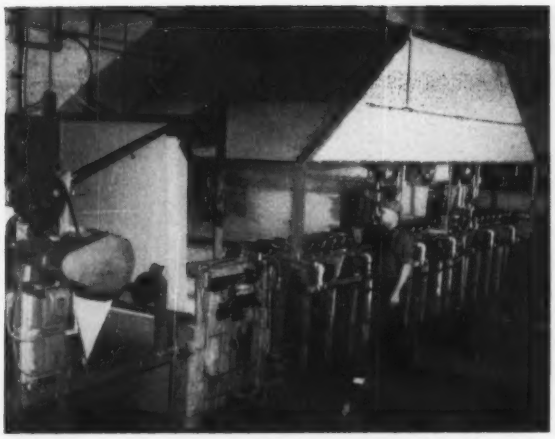
However, even hand operations can be streamlined to give top-quality production at higher rates than before possible. Castle Creek Prints, Inc., Washington, N. J., has done these things to achieve almost continuous flow:

Pinning—eliminated by the use of special wax-topped printing tables. A special type of petroleum wax—hard, but tacky—is used on table tops. The types of cloth printed at Castle Creek adhere to the wax and remain in perfect register without the laborious task of pinning.

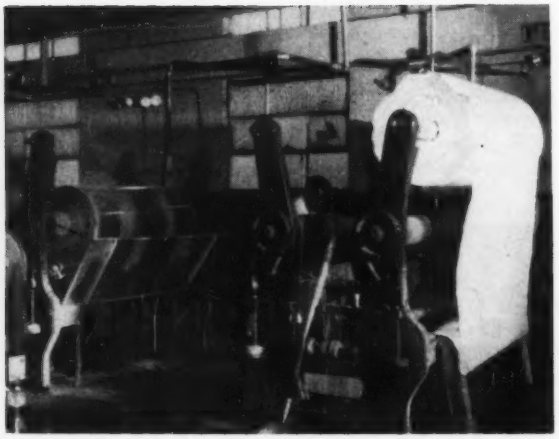
Drying—expedited by the installation of an overhead-supported steam-heated dryer. Operation of this dryer is as follows: Cloth, after printing, is elevated on rods and festooned on overhead racks. The dryer rolls on a track perpendicular to the ends of the tables. The dryer operator goes from one table to the other and feeds the uppermost festoon into the dryer. Residual moisture is low by the time the cloth reaches the dryer; so very little heat is needed to dry the cloth. A roll-batching device at the dryer exit rolls the cloth on a shell, ready for the steamer-developer (acid ager).

New Automatic Machine Handles Eight Colors

A new electronic machine made by Fritz Buser Engineering, of Switzer-



OPEN-WIDTH WASHER is used on failles, bengalines, rayons, and other fabrics that require controlled relaxation during boil-off.



DYE JIGS are used to apply background color where required for the pattern. Goods then are framed and dried for printing.

land, is used on long runs of cloth where the type of design and the drying time of the colors used permit. Eight colors can be printed simultaneously by the machine, as follows:

Cloth is fed from a roll into the machine. A furnisher roller applies gum arabic to the back of the fabric. A rubber-covered steel-reinforced belt with positive drive serves as a table top.

The cloth advances automatically to position (adjustable to 1/256 in.) and stops. The first screen then is lowered onto the cloth and the squeegee traverses across the warp a preset number of times, according to the type of color in that part of the pattern. (Each frame operates independently and can be adjusted for pressure and number of passes.)

After the first screen is printed, it lifts and the cloth advances another frame. The second screen is printed over the first while the first screen transfers its design onto a new section of cloth. This procedure continues until the cloth completes its travel and enters a dryer.

Other operational features of the Buser machine that contribute to its high-quality work are:

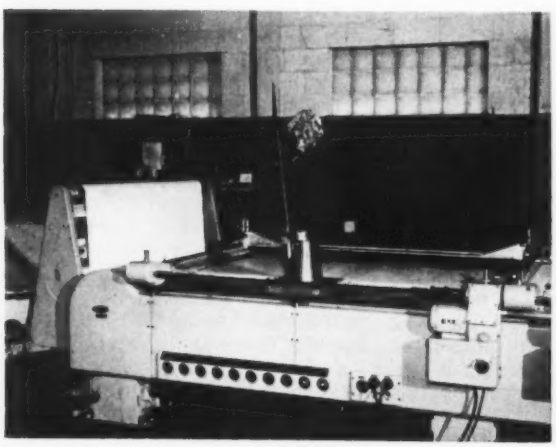
Speed control—As the belt advances the cloth after each frame, a "speed curve" device starts the belt moving slowly to overcome inertia, speeds up for the major portion of the frame, and then slows down to allow a perfect stop, in register. This device prevents stretching of the cloth.

Belt cleaner—A continuous wash is given the belt as it traverses the underside of the machine. A lint catcher strains the wash water to prevent clogging of drains. This system serves to present a clean, dry surface to the cloth.

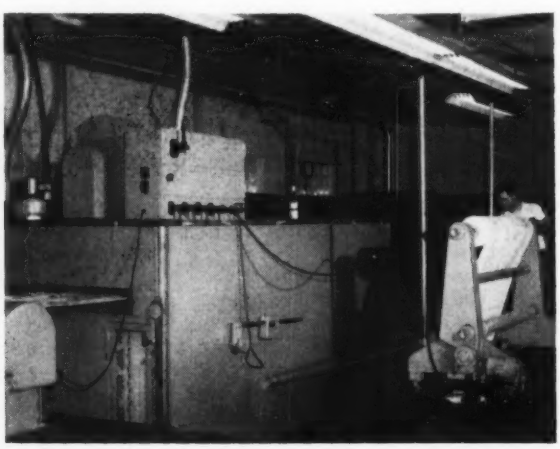
Development and Finishing

As a majority of the colors used are of the Algosol, Rapidogen, or other brands of vat leucoesters, a steam development follows printing. It is advantageous to develop these dyes as soon as possible after printing because color value can be lost during storage. A vertical multipass steamer is used at Castle Creek.

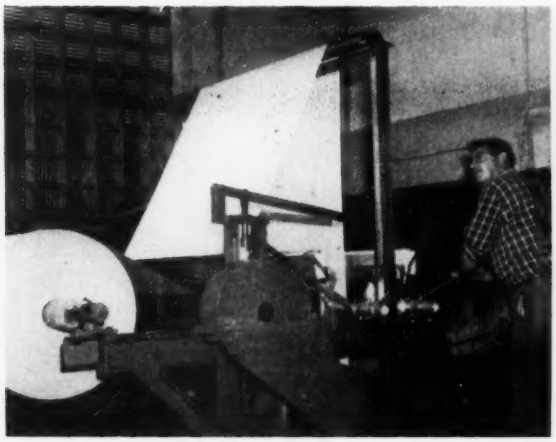
Immediately after development a thorough, relaxed, open-width washing is given in a three-bowl Rodney-Hunt washer. A squeeze-roll extraction and drying on cans follow the washing.



MACHINE CONTROLS permit adjustment of length of repeat, number of traverses for each frame, pressure on squeegees, speed of advance, and many minor adjustments.



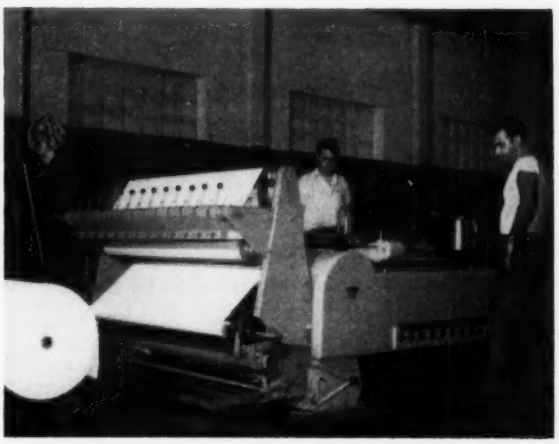
DRYER END of the printing machine serves to remove residual moisture from the printing pastes and to batch the cloth. Goods proceed from here to the developer.



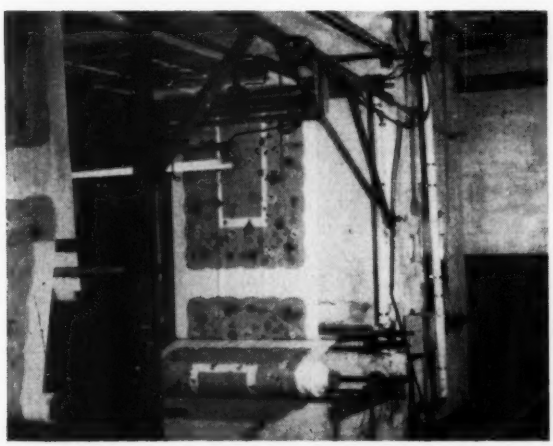
GAS-FIRED SINGER, built by the company, is used to clean up some fabrics before printing. Clean-faced cloth prints sharper.

PRINTING TABLES are covered with a petroleum wax. Goods adhere to this surface without tacking. Two operators handle each table.

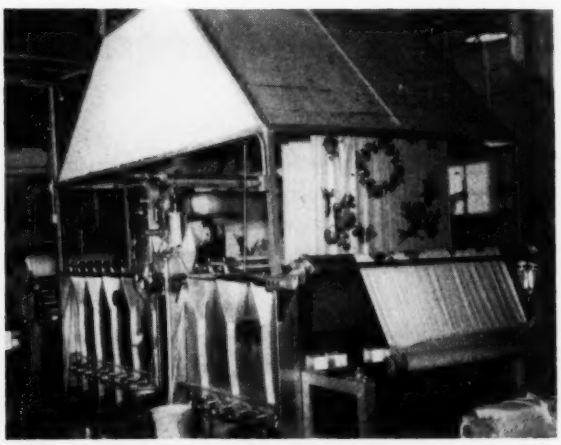
TRACK-MOUNTED DRYER serves to remove residual moisture from printed cloth before rolling. This operation makes screen printing almost continuous.



ENTERING END of the Buser machine, recently installed, has an application roller for furnishing gum arabic to the back of the cloth. This gum holds the cloth firmly to the rubber conveyor belt.



STEAM AGER develops colors after printing. Algosols and Rapidogens comprise the bulk of printing colors used at Castle Creek. Pigments and metallic powders are used to a lesser extent.



TWO-BOWL TENSITROL WASHER is used to remove excess color, gum, and printing assistants before drying and finishing. A squeeze-roll extraction follows the washing.

PORTABLE ATTACHMENT hooks to the vacuum line that runs down each row of cards. The cards are cleaned once a shift, and the pickers are also cleaned once a shift.

At Avondale's Sycamore Plant—

Vacuum Conveyor System Speeds WASTE REMOVAL

▶ Before the vacuum system was put in at Sycamore, one man on each shift carried waste from the operating departments to the waste room. Now the flat strips from 203 cards are removed in 5 mins. Two lines are necessary to keep the waste separated, and the waste is stored in movable bins.

By THOMAS B. WINSTON, Assistant Editor, TEXTILE WORLD

"THERE IS NO COMPARISON between our vacuum waste removal and the old method of hauling waste out in boxes," says Homer White, superintendent of Sycamore Spinning Plant, Sycamore, Ala. "The vacuum system is not only more convenient, but it eliminated the man on each shift who used to carry the boxes. With this conveyor, boxes and piles of waste aren't around to suggest that a little more waste wouldn't make any difference."

Two vacuum lines are necessary because the interval between the 2-hr. card-stripping periods is only 20 mins. One vacuum line connects directly with the continuous strippers on the cards, and the other line handles the flat strips and other kinds of waste.

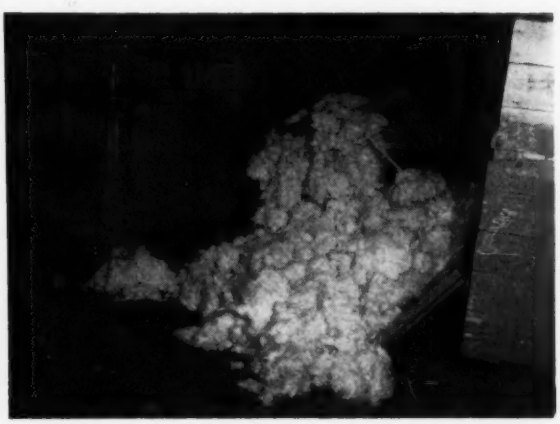
In an average week, the conveyor carries about 3,300 lbs. of vacuum strips, 9,000 lbs. of flat strips, 15,000 lbs. of comber noils, 3,500 lbs. of fly, 7,500 lbs. of motes, 900 lbs. of dust-house waste, and 1,100 lbs. of sweeps.

FLAT STRIPS from 203 cards are sucked up by these outlets in 5 mins. A valve operated by a hand wheel nearby opens the outlet. These outlets are convenient for sweeps.

TWO VACUUM LINES carry the waste from the picking, carding, and spinning departments to the waste room. One line takes care of the continuous strips, and the other line takes care of all other waste.

FOUR TANKS, two for each line, collect the waste. Two pumps in an adjacent room develop a vacuum of 8 lbs. to pull the waste into the tanks. The tanks are unloaded by hand.

BINS mounted on casters keep the waste separated. The bins are kept in this storage room and can be easily pushed into the waste room. The hinged flap makes unloading easy.



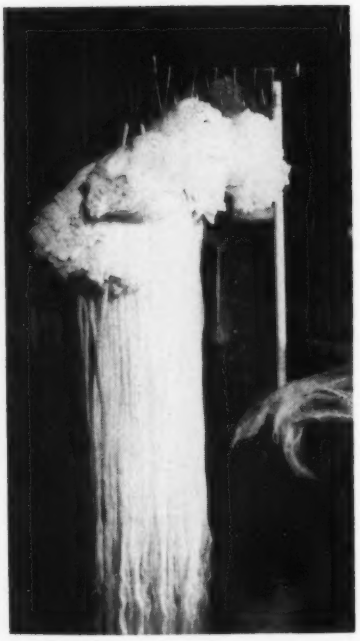
EACH TYPE OF WASTE is baled separately by this hydraulic press. The bins are pushed in, and the waste is dumped into the below-the-floor bale cavity by the man who works the waste room.

New Handling Ideas Speed FULL-FASHIONED Production

Management men at Shannon Hosiery Mills speeded production, without impairing quality, by adopting these new ideas—

- **A continuous-flow system that allows 50-doz. lots to move from gray stock to shipping room in a few hours**
- **Mechanical counting**
- **Special stock racks to make up lots**
- **Preboarding stands**
- **Gravity conveyors**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD



SEAMERS' RACK is a pipe fixed to the bench with a horizontal rod welded to the top to receive the hollow handling device.

BOTTLENECKS HAVE ALWAYS BEEN a pain in the neck to the hosiery producer. Loopless toes got rid of one of the full-fashioned knitter's headaches, but plenty more remain in the many processes from seaming to shipping. Shannon Hosiery Mills, Columbus, Ga., tackled this problem with a continuous-flow system that not only cut costs but improved quality.

When the stockings are taken from the steam chamber after knitting, they are placed on service racks in the seaming room and separated according to the seam colors. A service girl places the stockings to be seamed on a rack mounted on the bench to the seamer's left.

The rack is a 2-ft. vertical pipe screwed to the bench and wrapped with cloth to prevent pull threads. A $\frac{3}{8}$-in. rod is welded in a horizontal position at the top. The hollow carrying rod slides onto this rod.

To protect the stockings from oil and from pull threads resulting from snagging on the rough spots of the seaming machine, a plastic cover is fitted over the lower part of the seaming machine.

Stockings Are Counted Mechanically

The stockings drop into a tray and are taken to the gray inspector who sorts the stockings into first, seconds, menders, and reseams. The counting is done by a mechanical counter fixed between the tray and the inspecting form. The inspector's left hand trips the counter as she reaches for a new stocking.

COLORED-PLASTIC STRIPS are inlaid in the bench to assist the pairer in sorting out long, medium, and short stockings.

CONVEYOR BELT moves the stockings to the Permaprint machine. The operator on the right supplies and removes the goods.

TWO-TIERED GRAVITY CONVEYOR speeds stocking production. The bottom tier conveys goods to the folders, and the top tier moves stockings to the boxers.

The reseams are returned to the seamer, the knitters' seconds are tabulated, and the rest go to the mender in 2-doz. lots. Each 2-doz. lot is separated by a dye bag. After mending, the stockings are made up into dye lots so that each lot is a multiple of 2 doz.

A specially constructed stock rack is used to make up lots. The rack accommodates four styles to each side. Each style is subdivided into five different foot sizes. The rack holds 20 cloth bags on each side, and odd stockings are drawn from this stock to make up 2-doz. lots.

Preboarder's Rack Speeds Production

The preboarder has a movable tray rack fitted to her table. The stocking tray can be swung to any position to suit the preboarder. A movable platform on casters slides along a shaft to receive the stockings as they are taken from the preboarding forms.

This system reduces handling, increases the preboarder's production, and reduces fatigue. The 2-doz. lots are placed in dye bags with a ticket showing the size and style.

Colored dye bags are used to denote the knitting date of the stockings. The colors are changed every six months.

The gray-stock racks are 12 ft. high, and the 2-doz. lots are sorted out in 36x24x24-in. racks according to size and style. The small sizes are kept at the upper level, and each horizontal row holds a different size. Vertical rows denote the style.

A specially constructed ladder running down each gray-stock alley allows the clerk in charge of gray stock to make up dye runs in a short time. The tall ladders, mounted on casters, run along a monorail fixed to the roof. The clerk can move from one lot to the next without climbing down the ladder.

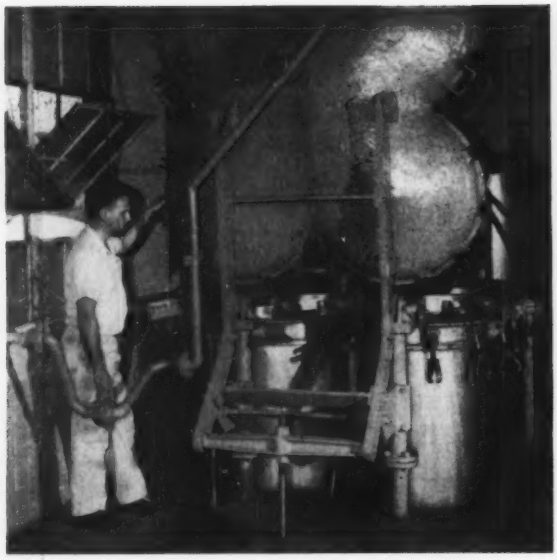
The final inspector sorts out redyes and menders from the firsts, seconds, and substandards. The menders are passed to a mending girl, who passes them back to the finished inspector after the damage is repaired.

Colored-Plastic Inserts Make Pairing Easy

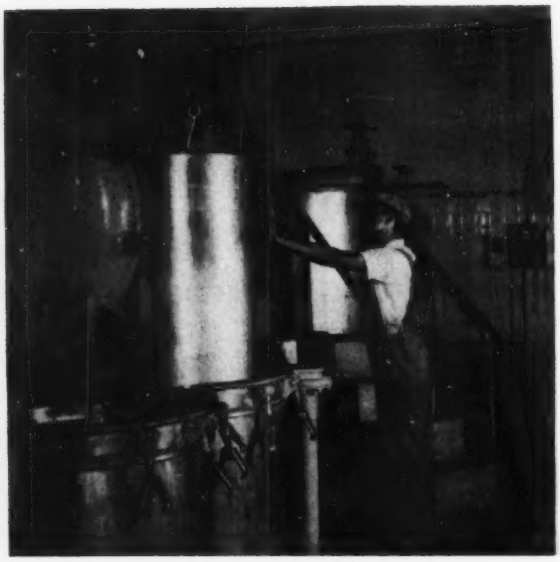
A 36-in. measure is inlaid on the pairer's counter, and colored-plastic stripes are inlaid to assist the pairer to classify the lengths. A red stripe is inlaid against the 27½-in. mark, and a yellow stripe is opposite the 29½-in.

CONTINUED ON PAGE 232

MOVABLE STANDS speed preboarding production. One holds the seamer's tray, and the preboarded stockings are laid on the lower tray at the left.



HYDRAULIC POWER lifts the heavy top of this four-beam machine. Howard Fogle, foreman of dyeing, takes a great interest in cleanliness and operating efficiency of the dyehouse.



EMPTY SECTIONS of multiple-kier machines are plugged with a hollow steel cylinder to maintain the proper liquor ratio and flow conditions when short lots are dyed.

COMPANION-COLOR DYEING
Is Simple, Efficient

► Exact color matching in beam-dyed yarn is the basis upon which the Avondale Companion-Color range is built

► Less than ¼ of 1% of seconds due to dyeing defects is routine performance in this all-cotton dyehouse that performs its function at a 75% reduction in normal labor costs

By GEORGE M. MOISSON

BEAM DYEING OF cotton warp yarns at Avondale Mills, Birmingham, Ala., is an efficient, simple, and accurate process. Multiple-kier Smith-Drum machines are the only pieces of equipment in the dyehouse. No extractors or dryers are used.

Howard Fogle, foreman of dyeing, believes that personal attention to details by himself and the machine operators—backed up by experienced beam winders—will produce quality dyeings. The ¼ of 1% seconds rate backs him up.

Here's How Avondale Does It

The fabrics in the Companion-Color line require from 1 to 11 colors, at least eight beams per style. By using multiple-kier machines, the dyer is able to reduce the variation in shade that would result from individual-beam dyeing. Two-, three-, and four-kier units are in operation. With a stainless-steel plug to block off an empty kier, any combination can be worked out to reduce the number of dye lots per warp or style.

Beams are seated on Teflon gaskets and top plates are tightened. Vent valves in the top plates are left open. If a plug is used, the plug vent valve is opened enough to approximate the flow through a beam.

Lots are wet out for 10 mins. at 200° F. with a sequestering agent and then drained. An air extraction follows, primarily to detect blown beams. Ten-pound air pressure is tied in to the inside-out circulation line. Incidentally, this air extraction system is the only method used at Avondale to remove water from the beams. A set of drying cans in front of the slasher dries each warp before slashing.

Each operator is responsible for weighing his own chemicals, preparing the lots, and cycling the dyeing by hand. No control instruments are used. Each dyeing is logged on a procedure form that goes with the batch and forms a permanent record.

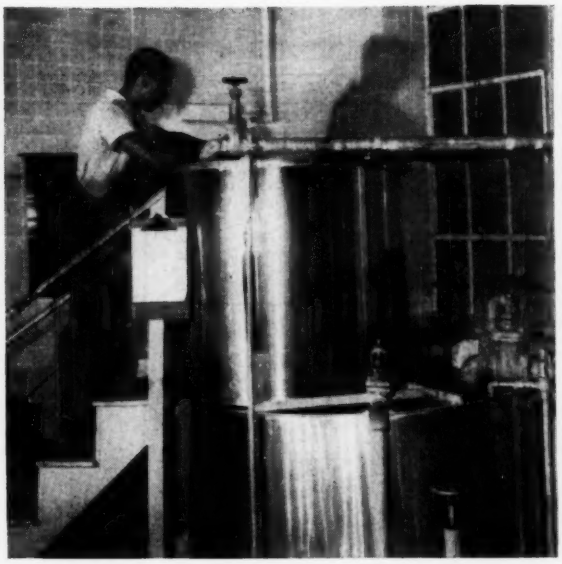
Time is saved by use of a hot-water supply from the nearby boiler room. At least ½ hr. per batch is the average saving.

A current line of 75 standard colors is being run, on 26s to 40s singles yarn, carded and combed.

Pigment and reduced vat dyeing procedures are typed in blank form for the operator to follow, and he records the weights of dyes and chemicals, sequence and time of operations, and other pertinent data. The condensed forms on the next page are similar to the ones used at Avondale.

Table 1 - Starting Service Factors for Common Mill Motors

ELECTRIC HOISTS and a monorail system are arranged to cover every foot of the dyehouse and storage area. This three-beam machine is identical with the two- and four-beam units in operating principle.



BOIL-UP TANKS are mounted above the expansion tanks. This arrangement allows the operator to remain at his station, watch the dyeing cycle, and prepare the next batch of dye or coupling component.

REDUCED VAT PROCEDURE

This formula and dye for.....kier machine
Style..... No. ends.....Yarn No.....
Code No.....Wt. beam.....No. beams.....
Dyestuffs Chemicals
Caustic .....lbs.
Hydro .....lbs.
Comp. No. 8 .....lbs.
Retarder .....lbs.
Wet out beams 10 mins. at 200° F. with....lbs. Kemplex A.
Blow
Add all caustic and hydro, run 5 mins. each way at....°F.

		Time
¼ dye on.....(mins.)	at.....(°F.)	.....
¼ dye on.....	at.....	.....
¼ dye on.....	at.....	.....
¼ dye on.....	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
.....		
.....		

Blow thoroughly (air oxidation, 10 mins.)
Wash 5 mins. each way, cold
Drain
Wash 5 mins. at.....°F. with.....lbs. rewetting agent
Blow and take out

PIGMENT VAT PROCEDURE

This formula and dye for.....kier machine
Style.....Yarn No.....No. beams.....
Code No.....No. ends.....Wt. beam.....
Dyestuffs Chemicals
Caustic .....lbs.
Hydro .....lbs.
Comp. No. 8 .....lbs.
Retarder .....lbs.
Wet out beams 10 mins. at 200° F. with....lbs. Kemplex A.
Blow

		Time
½ dye on.....(mins.)	at.....(°F.)	.....
½ dye on.....	at.....	.....
½ caustic on.....	at.....	.....
½ caustic on.....	at.....	.....
All hydro on.....	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....
Change and run...	at.....	.....

Blow thoroughly—(air oxidation, 10 mins.)
Wash 5 mins. each way, cold
Drain
Wash 5 mins. at.....°F. with.....lbs. rewetting agent
Blow and take out

NAPHTHOL PROCEDURE

This formula and dye for.....kier machine
Style.....No. ends.....Yards.....
Yarn No.....Wt. beam.....No. beams.....
Wet out 10 mins. at 200° F. with.....lbs. Kemplex A.
Blow
Spring 5 mins. each way with...lbs. caustic soda at 140° F.

	Time
¼ Naphthol on 5 mins. (at 140° F.)	.....
¼ Naphthol on 5 mins.	.....
¼ Naphthol on 5 mins.	.....
¼ Naphthol on 5 mins.	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....
Add.....gal. brine run 5 mins.	.....
Add.....gal. brine run 5 mins.	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....
Blow (5 mins.)	.....

Cold Wash: Add.....gals. brine while filling machine and run 5 mins. each way.
Drain
.....lbs. Base (or Salt).....qts. acetic acid
.....qts. Stabilon.....gal. brine

	Time
Run 5 mins. cold	.....
Change, run 5 mins. (cold)...	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....
Change, run 5 mins.	.....

Blow
Wash 5 mins. each way, cold
Drain
.....qts. synthetic detergent.....lbs. Soda Ash
Wash 5 mins. each way at 190° F.
Drain
Wash 5 mins. at 190° F.
Blow and take out

BLANK PROCEDURE FORMS supply basic procedural information for the dyehouse operator. Specific information, as indicated, is filled in by the dyer. When the operator performs a step in the cycle, he notes the time. This form serves as a permanent record.

THE PROPER SELECTION of a rubber transmission belt starts with a de-

Horsepower per inch per ply

Table 1 - Starting Service Factors for Common Mill Motors

Applications	ELECTRIC MOTORS										ENGINES		
	A.C								D.C.		Gas and diesel		
	Squirrel cage				Synchronous single phase								
	Normal torque, line start	Normal torque, compensator start	High torque	Wound rotor (slipping)	Normal torque	High torque	Repulsion and split phase	Capacitor	Shunt wound	Compound wound	Four or more cylinders above 700 rpm.	Steam	Line shafts and clutch starting
TEXTILE MACHY.													
Spinning frames	1.6		1.8										
Twisters	1.6		1.8										
Looms	1.2												
Warpers	1.2												
Reels	1.2												
COMPRESSORS													
Centrifugal	1.2	1.2		1.4	1.4				1.2		1.2		
Rotary	1.2	1.2		1.4	1.4		1.2	1.2	1.2		1.2		
Reciprocating													
Three or more cyl.	1.2	1.2		1.4	1.4				1.2				
One or two cyl.	1.4	1.4		1.5	1.5				1.2				
FANS & BLOWERS													
Centrifugal	1.2	1.2		1.4					1.2		1.2		
Propeller	1.4	1.4	2.0	1.6		2.0			1.4		1.4		
Induced draft	1.2	1.2		1.4					1.4		1.4		
Positive-displacement blowers	1.6	1.6		2.0	2.0	2.0					1.6		
Exhausters	1.2	1.2		1.4					1.4			1.5	1.5
PUMPS													
Centrifugal	1.2	1.2	1.4	1.4			1.2	1.2					
Gear	1.2	1.2	1.4	1.4			1.2	1.2					
Rotary	1.2	1.2	1.4	1.4			1.2	1.2	1.2		1.2		
Reciprocating													
Three or more cyl.	1.2	1.2		1.4	1.4	1.6					1.8	1.8	
One or two cyl.	1.4	1.4		1.6	1.6	1.8					2.0	2.0	
LINE SHAFTS	1.4	1.4		1.4	1.4	2.0	1.4	1.4	1.4	1.4	1.6	1.6	1.6
GENERATORS & EXCITERS	1.2								1.2		2.0	1.4	1.4

SERVICE FACTORS for most textile machinery represent the overload on the drive when motors are started.

Select TRANSMISSION BELTS To Make Them Last

Table 2 - Pulley Diameters for Various Plies

Pulley diameter in inches

Rubber-belt fabric weights	Silver 35-oz. hard duck		28- and 32-oz. soft duck	
Number of plies	Minimum	Normal	Minimum	Normal
3	4	7	4	6
4	6	9	6	8
5	8	12	8	10
6	10	15	10	14
7	12	18	12	16
8	14	22	14	20
9	16	26	16	24
10	18	39	18	28

PULLEY DIAMETERS should be normal size or larger to insure proper flexing of the selected belt.

A belt too heavy for the job it's selected to do is as bad as one too light for the load it has to carry. To insure long life, use these charts to select belts for—

- **Size of the pulleys**
- **Angle of pulley contact**
- **Ply number and thickness**
- **Flexibility and strength**

By NEWEL PERRY
Flat-Belting Engineer, Thermoid Co.

THE PROPER SELECTION of a rubber transmission belt starts with a determination of the maximum horsepower to be handled by the belt. This horsepower is obtained by multiplying the rated horsepower of the driving unit (the name-plate rating) by a service factor that represents the overload on the drive while the motor is starting. The overload varies with both the type of drive unit and the type and use of the driven unit. Of course, consideration of the operating horsepower required by the driven unit enters into the selection of the horsepower of the driving unit.

Start With the Service Factor

A proper belt is described in terms of width, W, and number of plies, P. Their product, WP, represents the ply-inch of fabric in the belt necessary to carry the load. The WP value is determined by dividing the chart value of horsepower per inch per ply into the total horsepower (including the starting service factor), as in formula (1) below. Other considerations, such as the existing pulley-face width and good belt proportioning (see Tables 2 and 3), dictate the selection of the actual width and the corresponding number of plies required by the WP product.

Any belt in the table of well-proportioned belts having the calculated WP product (or next above that calculated value) is satisfactory if pulley diameters are not too small. (See Table 2.) In practice the tendency is toward the widest possible belt for the projected drive to obtain the thinnest possible belt for greater flex life.

The WP product is given below:

$$(1)\quad WP = \frac{HP \times \text{service factor}}{hp}$$

where WP = the required width-ply product
HP = plate or rated horsepower of the driving unit
hp = horsepower capacity per inch per ply for the fabric selected at the belt speed and angle of belt contact involved. It is obtained from the horsepower-capacity chart.

Belt speed, S, is determined as follows:

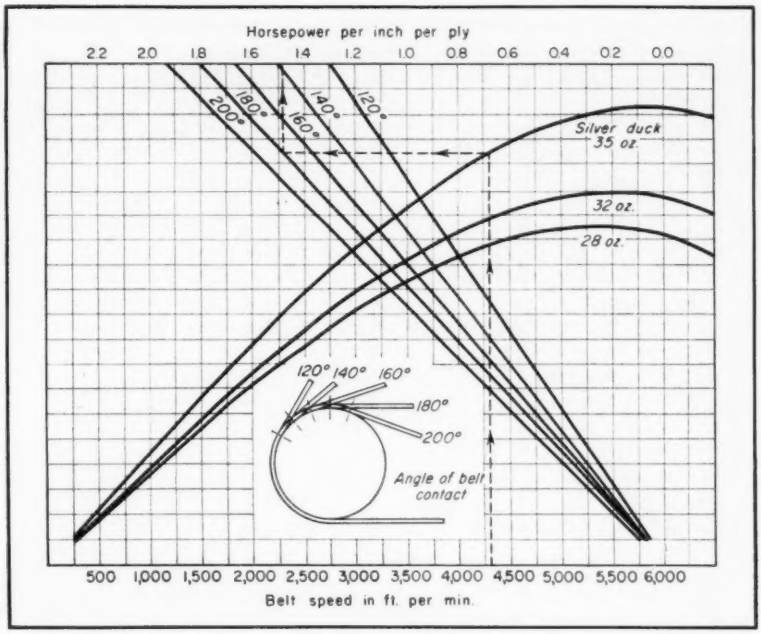
$$(2)\quad S = 0.262 \times D \times \text{rpm}$$

where S = belt speed in feet per minute
rpm = revolutions per minute of the drive pulley
D = diameter of the drive pulley in inches

Angle of belt contact is given by

$$(3)\quad A = 180° - \frac{60\,(D - d)}{C}$$

CONTINUED ON PAGE 212



THE HORSEPOWER CAPACITY of a belt is found by locating the belt speed on the bottom scale and following the chart readings. Example: Follow the dotted line beginning at 4,300 rpm. up to the curve for the weight of duck in the fabric (35 oz.), move horizontally to the angle-of-belt-contact line (180°), and move up to the horsepower-per-inch line at the top of the scale (1.5). Then multiply the top scale reading (1.5) by the belt width and number of plies. The resulting figure gives the belt-horsepower capacity. Corrections for centrifugal tension are included in the chart.

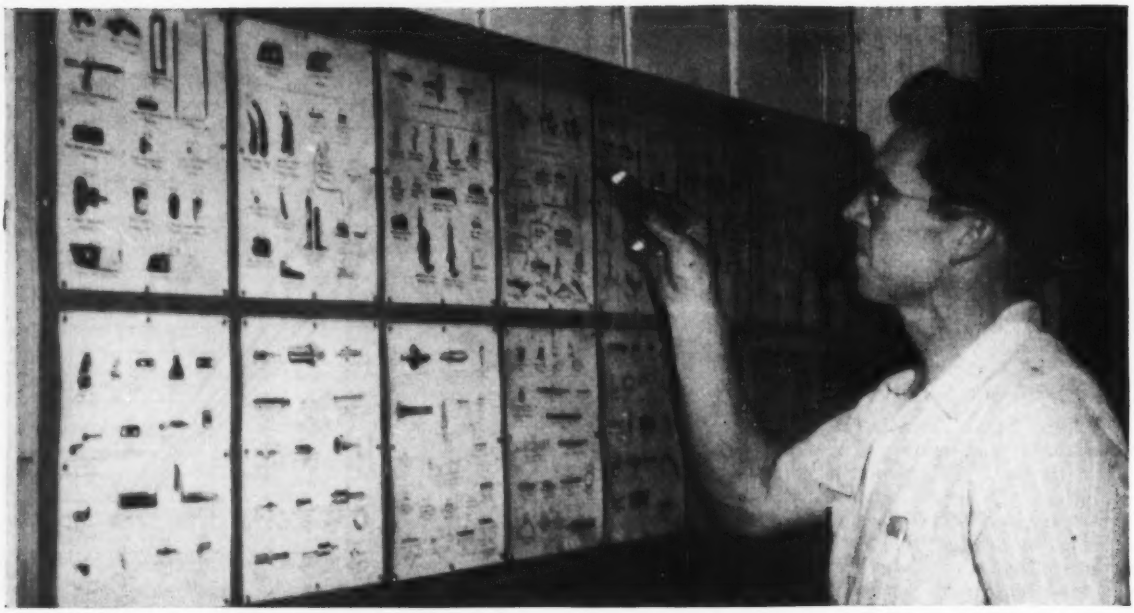
Table 3 - Number of Plies for Standard Belt Widths

Standard belt width (ins.)	Minimum plies	WP value	Intermediate plies	WP value	Intermediate plies	WP value	Maximum plies	WP value
2	3	6					4	8
3	3	9	4	12			5	15
4	3	12	4	16			5	20
5	4	20					5	25
6	4	24	5	30			6	36
8	4	32	5	40			6	48
10	4	40	5	50			6	60
12	5	60	6	72			7	84
14	5	70	6	84			7	98
16	5	80	6	96			7	112
18	5	90	6	108	7	126	8	144
20	5	100	6	120	7	140	8	160
22	5	110	6	132	7	154	8	176
24	6	144	7	168			8	192
26	6	156	7	182	8	208	9	234
28	6	168	7	196	8	224	9	252
30	7	210	8	240	9	270	10	300
36	7	252	8	288	9	324	10	360
42	7	294	8	336	9	378	10	420
48	7	336	8	384	9	432		
48			10	480	11	528	12	576

BELT WIDTHS determine the number of plies in the thickness. Belts that are too thick crack quickly.

Machine downtime and fixers' time are saved, spare parts are con-

Small Parts Are Kept



WORN MACHINE PART is compared with wall chart to enable Fixer Ralph Lively to obtain index number.

This SPARE-PARTS SYSTEM Saves Fixers' Time

CHAIN LINKS are kept in wooden boxes. Manager Russell Katzenmoyer checks links with photograph of each link type on the end of the box.

SMALL SPARES are easily found by Foreman Len Drake with the aid of the indexed numbers on the stock jars. Glass preserving jars are used.

ORIGINAL PART is painted red and kept in a small box tacked to the stock bins, which are inclined to allow the stock clerk to appraise stock rapidly.

Machine downtime and fixers' time are saved, spare parts are controlled, and fewer mistakes are made with this spare-parts system that features—

- **A numbered photograph of each part**
- **Well-laid-out stock racks**
- **An easily constructed tool board**
- **Wall charts showing part breakage**

The spare-parts system, which in this case is for a half-hose mill, can just as well be applied in any textile plant

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

A SPARE-PARTS SYSTEM that runs as smoothly as clockwork is in operation at the Chipman La Crosse Hosiery Mills, East Flat Rock, N. C. Having spare parts labeled by photographs and controlled by responsible men is the secret of the system's success.

When a machine part needs replacement, the fixer removes the part from the machine and checks the part with a wall chart.

Parts Are Photographed

Manager Russell Katzenmoyer made up the chart by photographing all replaceable machine parts. Each part was photographed against a white background with a camera setting of 1/100 sec. at f.16.

The prints of related parts such as cams, picks, and yarn fingers were then grouped and pasted on a 10x8-in. sheet. An index number and letter were printed over the top of each picture, and the name of the part was printed below it.

About 16 parts were printed on each sheet and enlarged to 10x8 ins. This double method of printing was used because copies of the chart were required.

The sheets are tacked in numerical order to two plywood boards fixed to the wall outside the cage where the spare parts are kept.

The fixer informs the head fixer or the foreman of the part number. The worn or broken part is examined and placed in a box outside the cage.

Small Parts Are Kept In Glass Jars

Small spare parts are kept in half-pint square glass preserving jars with screw-on lids. A ¼-in. felt pad is fixed to the bottom of the jar with linoleum paste to prevent breaking the jars when parts are added.

The jars are numbered 1 to 17, indexed from A to L, and kept in order on shelves fixed to the wall. All A-indexed jars are kept on the top shelf, B-indexed jars on the second shelf, and so on. An indexed label is glued to each jar, and the parts are also numbered on the shelf. A strip of transparent plastic covers the numbers to keep them clean and easily readable.

Larger parts such as pulleys and clutch levers are put in wooden boxes and kept in racks. Each box is divided into four compartments and labeled with the part number.

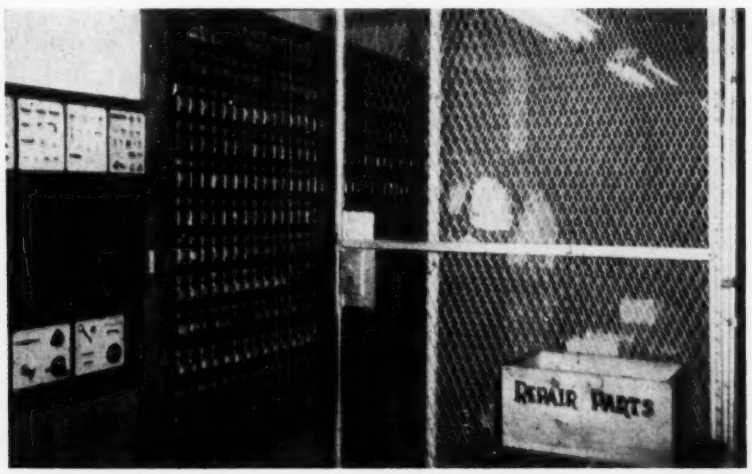
Chain links are stored in individual wooden boxes. A 5x4-in. print of each link type is pasted to a card and tacked to the end of the box with a plastic cover to protect the photograph from oily fingers.

Masonite Board Holds Special Tools

Special tools are also kept in the wire cage on a mill-made tool board. A ¼-in.-thick Masonite board was marked off in 1¾-in. squares, and a ⅜-in. hole was drilled at the corner

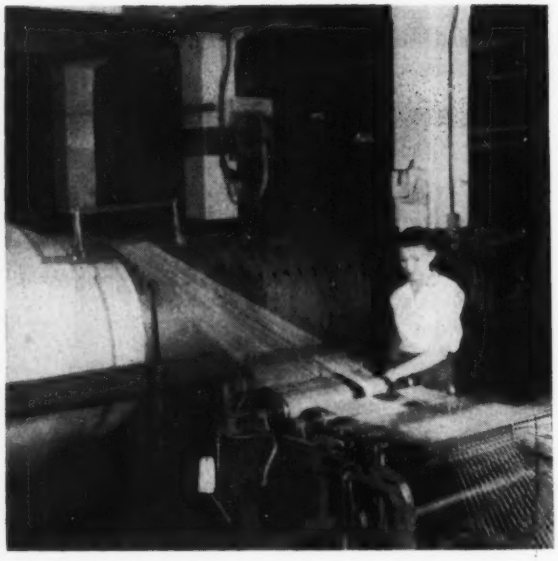
CONTINUED ON PAGE 186

TOOL BOARD is made from ¼-in. Masonite; ⅛-in. holes are drilled to receive ⅛-in. wire hooks that can be arranged to hold all tools.



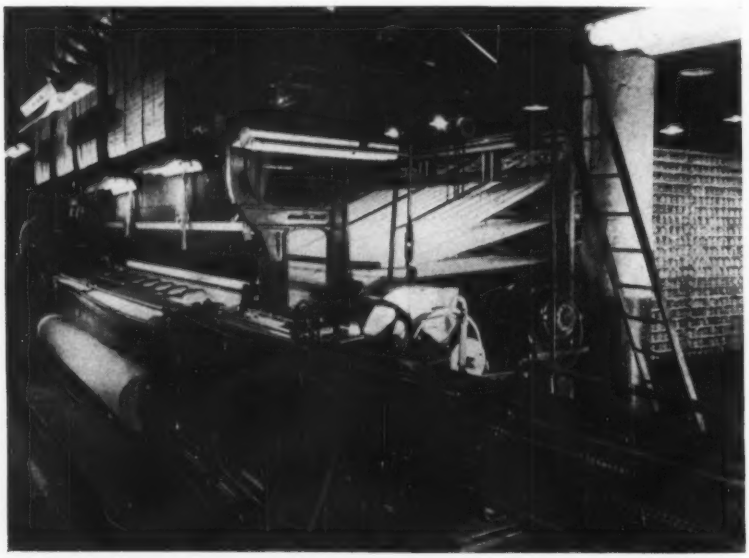
WALL CHART and repair-parts box are kept outside the stock room. The Mason jars filled with parts are inside the gate. To prevent confusion, knitters and fixers are not allowed inside the stock room.

THE CREEL for the cone warper was made at Artloom and handles a total of 288 wool or cotton ends creeled end to end. The operator is Katherine Beresford.



CONE WARPING reaches a speed of 175 to 200 yds. per min. on wool yarns and 250 yds. per min. on cotton yarns. Gladys Wall ties up a broken end.

Weave Wool and Cotton CARPETS On the Same Looms

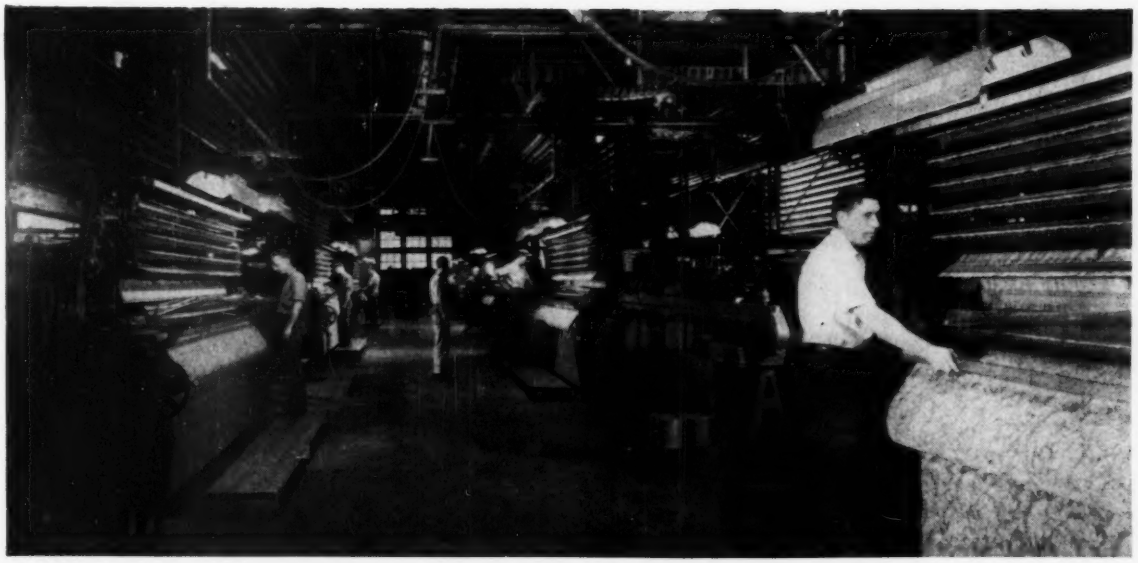


THE LANSDOWNE LOOM (or wire loom), designed to weave wiltons, weaves wool or cotton carpeting interchangeably. The weaver is Harry Landenburger.

The loom-motion changes and settings commonly necessary in changing from wool to cotton are eliminated at this large carpet-weaving mill. The engineers and mechanics of the plant have mastered the trick of changing from wool to cotton carpeting, and vice versa, and end with exactly the same type of carpeting on both materials. Only two loom changes are now necessary—

- **The setting of the harness cams**
- **The binder warp beam and the creeled ends**

By RICHARD B. PRESSLEY
Associate Editor, TEXTILE WORLD



THE AXMINSTER LOOMS (C&K), ranging in width from 27 ins. to 12 ft., make jacquard patterns in all colors. The weaver in front is Robert Killian.

WEAVING COTTON CARPETING on wool looms and then weaving wool carpeting on the same looms again is all in the day's work at Artloom Carpet Co., Inc., Philadelphia, Pa.

The main function of Artloom's completely equipped and staffed machine shop is to keep looms modern so that all the new color and style combinations in both wool and cotton carpeting can be woven efficiently.

Winding and Warping

Wool yarns for Artloom's carpets come from its Greenville, N. C., plant or from other outside sources.

Most filling yarns are 15-lb. jute. A cotton-jute 14-lb. combination is also used.

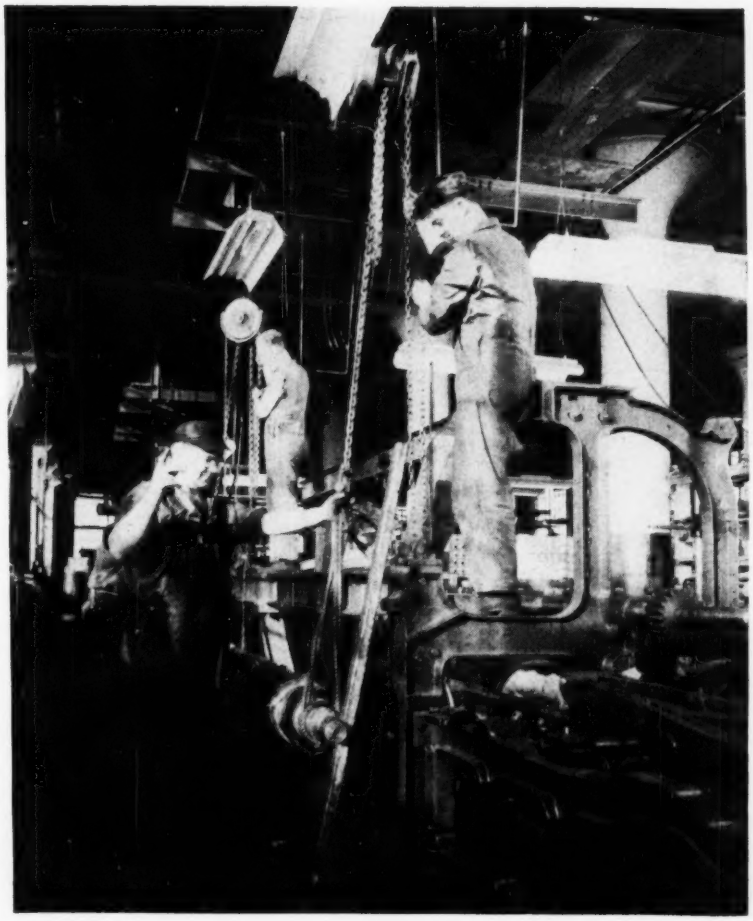
All filling yarns are received at the plant on cones and are wound for the looms on Lazenby cop winders. Each cop is wound 416 yds. in length, and each one contains 94% usable yarns; the other 6% is wasted at the looms, where all filling is changed by hand.

Warp yarns are also received at the plant on cones. Twisted-wool warp yarns are 3/33s and 2/47s. Soft-wool warp yarns are 2/50s and 4/25s.

Cotton warp yarn number is 7/3.

Cones of warp yarns are creeled on an Artloom-made creel and are warped on a Davis & Furber high-speed cone-type warper. The capacity of the creel is 144 ends on each side for a total of 288 ends.

The warper is run at 250 yds. per min. on cotton yarns and at 175 to 200 yds. per min. on wool yarns. No change in individual-end tension is

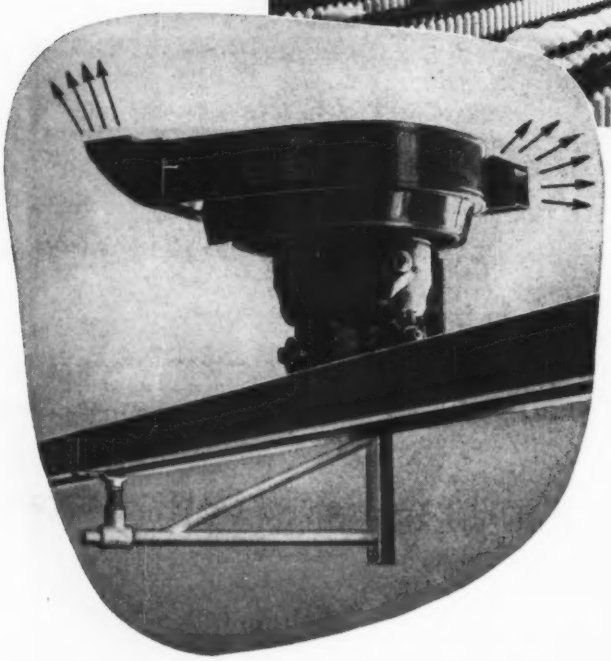


TWELVE-FOOT CARPET LOOMS were made from 9-ft. velvet looms by Artloom's own designers and mechanics right on the weave-room floor.

Announcing

a new and more powerful Parks-Cramer ROOM CLEANER

TYPE CTR-7



Parks-Cramer Room Cleaner is shown above in a cotton card room of medium height. Note Cleaner track inconspicuously mounted just above head height along posts at left and wall at right.

More cleaning from less track, largely without the need for overhead hangers. Complete and thorough overhead cleaning of high or low ceiling rooms with or without overhead belts, shafting, etc.

Air from several outlets at different angles in an air distributor which revolves continuously in a full circle about a vertical axis.

Parks-Cramer track is safe. Has no exposed electric conductors.

Different air distributors available. Number, shape, direction and velocity of air currents are suited to the cleaning requirements in each mill area.

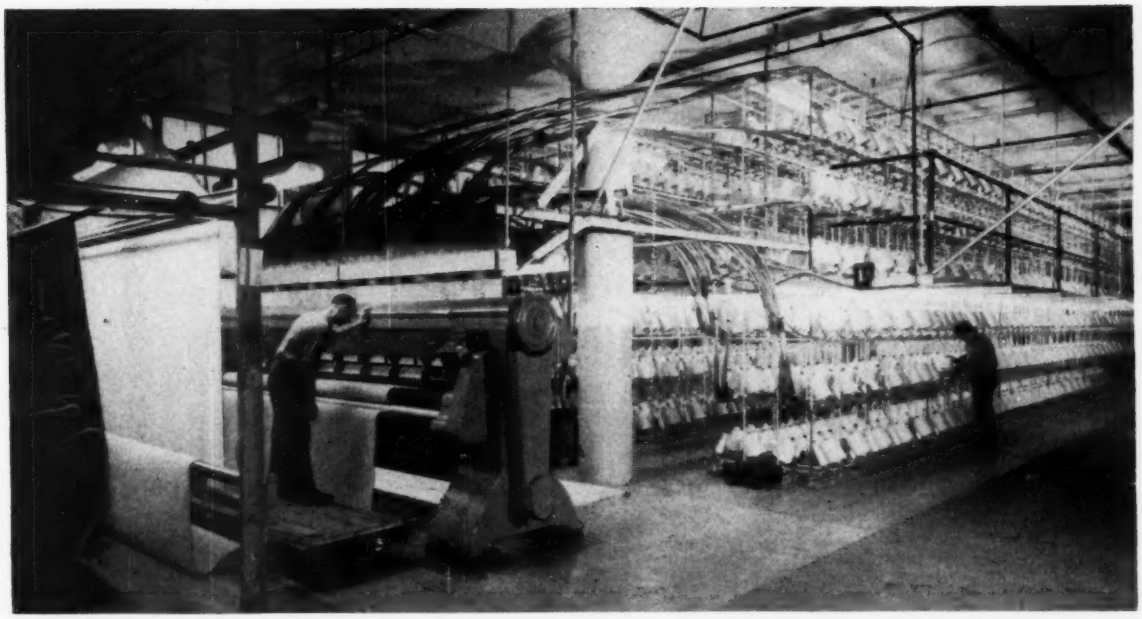
Within limits and where justified, can deliver air below the horizontal.

For further information write or phone

Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

394



THE TUFTING MACHINE is drawing double-creeled ends straight from the creels and placing the loops into the jute backing at 550 rows per minute.

necessary in changing from cotton to wool yarns.

To change from wool to cotton, or vice versa, the creeled cones are run out and the speed of the warper is changed; that's all the changing necessary.

Beaming

Warps are beamed by rolling the coned drum of yarn down a track to a beamer made by Warp Compressing Machine Co. As soon as the drum is moved from the creel, a second one takes its place so that there is no loss of warper production.

The beamer is driven by a 5-hp. Westinghouse Life-Line motor and is equipped with a Reeves variable-speed drive.

Cotton and wool warps for all types and widths of looms used are processed on the warper and beamer.

A kraft-paper yarn used as a stuffer in weaving is slashed on a conventional six-cylinder slasher with Ceremel C (a wax-base sizing material) mixed with pearl starch.

Cones of the kraft paper are creeled directly into the slasher.

Weaving

Artloom has 113 carpet looms ranging in width from 27 ins. to 18 ft. The 27-in. looms operate at 72 ppm.; the 18-ft. looms run at 34 ppm. There are few 27-in. looms; most are 12 ft. wide.

The axminster looms, manufactured by Crompton & Knowles Loom Works, have been altered less than

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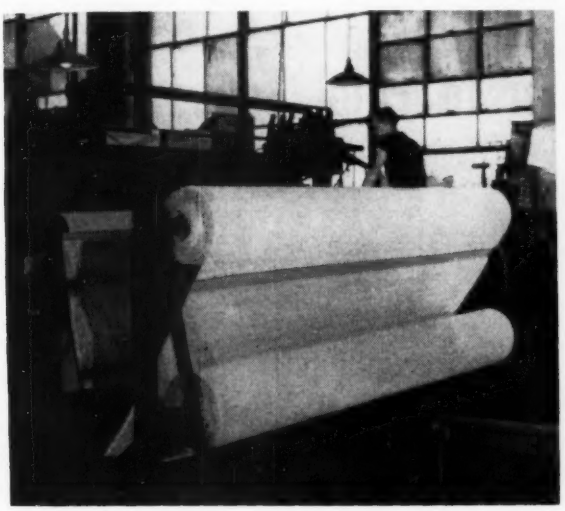
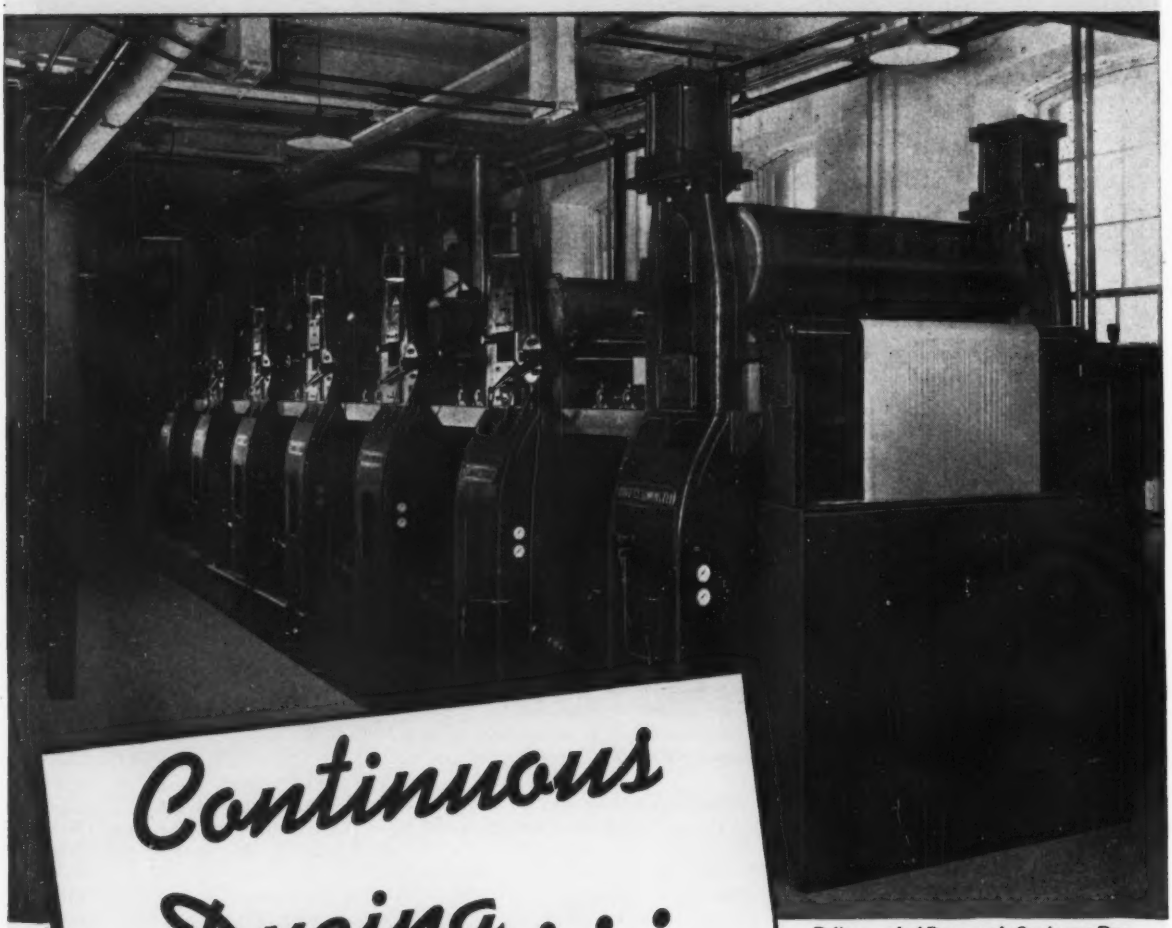


COTTON OR WOOL CARPETING is woven on the "shaft" looms two rolls at a time. The pile fabric is split on the loom to make the two fabrics.

IN THE BURLING ROOM, carpeting is perched and mended as it is run over automatically operated electrically driven frames built by Artloom.



Continuous Dyeing . . .

Delivery end of Butterworth Continuous Dyeing Range. Washer illustrated has eight 4-ton squeezes and a final 8-ton squeeze, foreground.

. . . from Pigment Padder to Final Squeeze

If you are doing conventional continuous reduced or pigment dyeing, the Butterworth Continuous Dyeing Range will cut your costs 10% to 35% on both vat and sulphur colors. And you will get deep shades, well controlled throughout the run.

If you are using slow, one-step-at-a-time vat dyeing methods, the Butterworth Continuous Dyeing Range will do the work of 24 jigs — with ⅓ the floor space, 40% of the labor cost, and big savings in chemicals and dyestuffs.

A complete 2-stage Butterworth Continuous Dyeing Range includes two pads, a hot flue dryer, a steamer and a compartment washer. It makes continuous dyeing possible on sulphurs, indigisols, and naphthols as well as vat colors.

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TEXTILE MACHINERY AMERICAN EXHIBITION ASSOCIATION
ATLANTIC CITY APRIL 26-30 1954

BUTTERWORTH

Mill Laboratories Show Close Agreement in COTTON-FIBER TESTING

- **A check-sample testing program during 1951 and 1952 showed a surprising agreement among the participating laboratories**
- **However, tests made by the same laboratory with the same operators were closer in agreement than tests made by different laboratories**
- **These tests were for fiber length with the Fibrograph, strength with Pressley tester, and fineness with Micronaire**

By T. H. HOPPER
Southern Regional Research Laboratory, U. S. Department of Agriculture

HOW RELIABLE are the tests made for cotton-fiber properties by different mill testing laboratories? A sample-testing program conducted by Committee D-13 of the American Society for Testing Materials during 1951 and 1952 indicated that there is a surprising amount of agreement.

The participating laboratories were requested to perform tests for length with the Fibrograph, strength with the Pressley tester, and fineness with the Micronaire. To provide data to check against the testing results, samples from the same lots were tested by the Southern Regional Research Laboratory of the U. S. Department of Agriculture.

From the reports, a selected group of laboratories was chosen against three criteria: (1) participation in both 1951 and 1952; (2) maintenance of standard atmosphere of 65% r.h. and 70° F. in the laboratory; and (3) performance of five or more individual tests on each sample.

Three Comparisons Were Made

The results were calculated in terms of standard deviations, and they are shown in the table.

Three measures were selected to show the variation in the testing results:

1. Within-sample values are for the individual tests made on samples from the same lot—for SRRL, 10 samples from each of nine lots, and for the selected laboratories, two samples from each of five lots.
2. Between-sample values are for the average results of each of the 10 samples tested at SRRL and the two samples tested by the selected laboratories.
3. Between-selected-laboratories and between-all-laboratories over-all deviations indicate the variations in the average test results reported on the samples from all the lots.

Estimated Over-All Standard Deviations

Test	Within sample		Between samples		Between selected laboratories	Between all laboratories
	SRRL	Selected laboratories	SRRL	Selected laboratories		
Fibrograph U.H.M.	0.017	0.012	0.008	0.018	0.028	0.035
Pressley index	0.19	0.20	0.08	0.20	0.34	0.34
Micronaire value	—	—	0.04	0.13	0.15	0.22

RESULTS of the check-sampling program were calculated in terms of standard deviations. The results show close agreement between the tests made by different laboratories, but closer agreement between the tests made at the same laboratory (SRRL).

What the Results Show

Variations in testing results are caused by differences between testing instruments, operator performance, and the check samples. Considering these sources of error, the testing results of all laboratories, as shown by the over-all standard deviations, are surprisingly close to the results of the selected laboratories.

The results do show that tests performed in one laboratory by the same operators do not vary as much as tests made in several laboratories with different operators. This difference is shown between the between-sample standard deviations of the tests made at SRRL and the tests made at the selected laboratories.

It is reasonable to assume that smaller differences would have been found if all laboratories had followed a specific set of instructions for each test, maintained standard conditions in the testing rooms, and tested standard cottons of known properties.

Larger variations between tests made on classer's samples would be expected unless the blending and subsampling is done with the thor-

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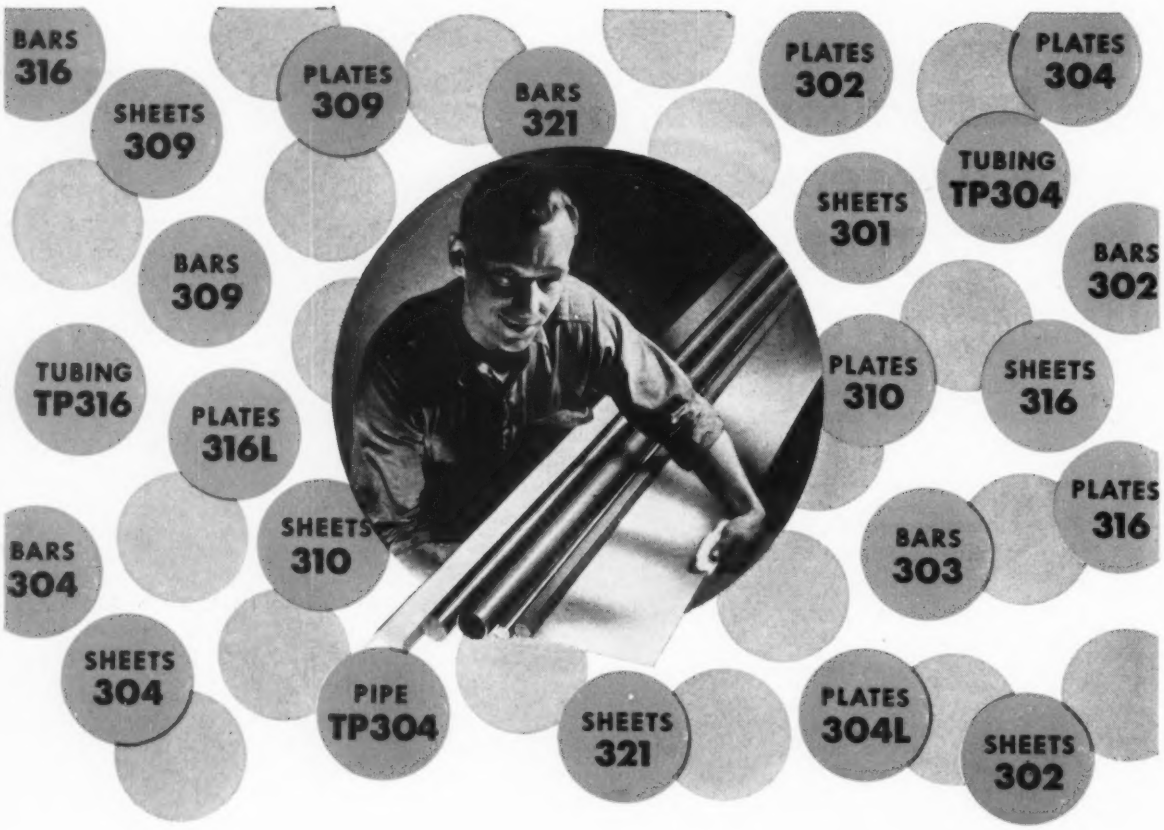

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RYERSON STEEL

How much stress, strain, pull and squeeze

Pointers FOR SUPERVISORS

How Do You Choose The "Right" Employee?

▶ Supervisors let their personal likes and dislikes influence the selection and development of workers. This system may produce a working group that gets along well together, but it may not mean hiring the best men for the job.

By MACON P. MILLER
Director, Industrial and Public Relations, Fieldcrest Mills

SEVERAL MONTHS AGO we discussed on this page the kind of treatment employees want from a supervisor. It is also important to reverse this concept and discuss those characteristics the supervisors want in an employee.

When we ascertain the type of supervision employees want, we get some information helpful in the selection and training of supervisors. Similarly, when we consider what we want of an employee, we are in a better position to know what sort of applicant we should select and what job aspects we should emphasize in the training we give him.

There is possibly more agreement among employees concerning the "good" supervisor than among supervisors concerning the "good" employee. Of course, supervisors agree that a good employee is an efficient worker, is quality-minded, comes to work regularly, will take supervision, co-operates with supervision and other employees, and is a friendly and pleasant fellow to have around. But beyond these general concepts—and in the relative emphasis to be placed on each—there is considerable disagreement.

Being a realistic fellow, the average foreman will realize he cannot find employees who adequately fill all these specifications. He will decide what is most important; he will make compromises on this basis. He will, in individual cases, accept an undesirable characteristic in order to get an important desirable one.

The Job Dictates the Qualities Needed

Sometimes these "crucial" characteristics are dictated by company policy or the type of item manufactured. A foreman in a company producing and advertising a quality product will normally want the type of employee who is quality-minded. He may sacrifice a certain amount of production to get this quality. On the other hand, where a cheap item with low quality standards is produced, the foreman wants speed as a primary characteristic of the employee.

Sometimes the nature of the individual job determines the major employee characteristics needed. Since a loomfixer must get along with his weavers, a cooperative temperament is an essential requirement. On a lone-wolf job, the good employee is likely to be a stolid, stable person rather than a sociable person.

There are, as suggested above, many factors beyond the control of the foreman that necessarily influence his preference for certain types of employees. There is still another factor in his preferences: the foreman himself. Even where company policy, the type of product manufactured, the types of processes and jobs, and other factors are common to several foremen, there is often sharp disagreement concerning the characteristics of good employees. An individual foreman will have likes and dislikes of his own. They may be logical or illogical. But they will influence his selection and development of employees.

Do You Hire Workers in Your Own Image?

Some foremen just naturally prefer the dependable employee who proceeds at a deliberate pace but does the job right. Others, just as naturally, look for the fast-paced individuals.

Often the foreman is actually looking for employees who are "made in his own image." A deliberate-paced foreman will tend to prefer employees who proceed at that same pace. A fast-paced foreman prefers fast employees.

These differences between foremen, while perfectly normal, present certain obstacles to the establishment of long-range and consistent personnel practices:

1. Selection. The foreman, whether formally or informally, sets up the specifications for selection and placement of employees in his department. If interviews are used for selection, the personnel manager readily learns what types of applicants are most acceptable to the particular foreman. He determines applicant characteristics as best he can through interviews, work data, and reference checks and refers the "right" types to the foreman.

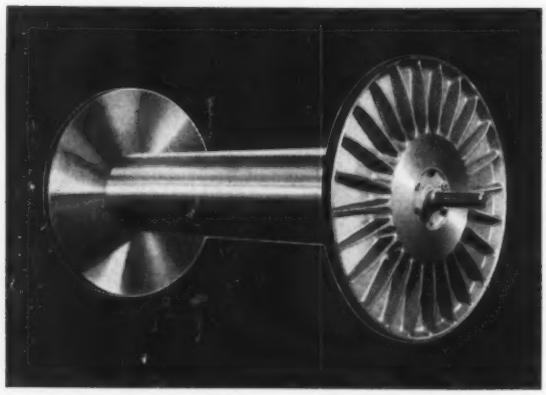
When validated tests are used for selection, the foreman still controls the selection. In many cases the criterion of job success against which the tests are validated is a rating by the foreman. The tests that work out are those that stack up with the foreman's ratings. By the use of these tests we then select employees who will be rated high by the foreman—those employees, that is, who are of the type approved by the particular foreman.

Even if a criterion of job success other than foreman ratings is used to validate tests, supervisory control over employment specifications is heavy.

CONTINUED ON PAGE 174

How much stress, strain, pull and squeeze should a good nylon section beam withstand?

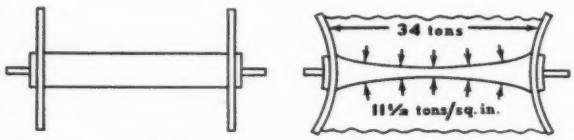
When a section beam is filled with yarn, especially nylon yarn, it stretches in length, is squeezed in diameter, and the heads bulge out. In some instances, the pressure exerted on a fully loaded beam head reaches over 34 tons, crushing stress may go as high as 23,000 P.S.I., and the distance between the heads may grow by as much as one-eighth of an inch.



This Hayes Aluminum Nylon Beam withstood a load of 263,000 pounds in a test made by the Engineering Department of Swarthmore College. It is available in 30" and 32" head diameters and is adaptable for use with all current makes of warpers.

The purpose of beam design is to keep distortion caused by these pressures to a minimum, thus preventing yarn breakage. At present, few, if any, engineering and production men in textile plants have adequate information on how big a load of yarn a beam will take while still maintaining an adequate safety factor at the critical stress points. Many beams are purchased and installed with a guess and a prayer that they will hold up under operating conditions.

As textile manufacturing plants make the transition from cotton and wool yarn to nylon and acetate rayon, the importance of good information increases. For, while these yarns do offer the opportunity for better weaves, and better selvages, they are also increasing the stress and strain on the section beam.



When a perfectly harmless warp beam is filled with nylon yarn

It gets stretched and bulged

Hayes Industries, Inc. of Jackson, Michigan have been conducting strain-gauge tests for their light-metal beams for six years. All this beam-stress data is now being made available to industry men. Furthermore, Hayes salesmen are available to help explain the data to interested engineers and production foremen. They can help you decide the exact beams required for your operation — to give you the best trouble-free production at the lowest cost.

HAYES INDUSTRIES, INC.,
Jackson, Michigan

Dear Sir:

☐ Please send me all available beam-stress data you have.

☐ I would appreciate having a salesman call to go over the data with me.

Name .....

Title .....

Company .....

Address .....

City ..... State .....

HAYES INDUSTRIES, INC.
JACKSON, MICHIGAN

THE WORLD'S LARGEST PRODUCER OF LIGHT METAL BEAMS

Southern Representative: R.E.L. Holt, Jr. & Assoc., Greensboro, N. C. | Eastern Representative: J. Paul Laird, Philadelphia, Pa. | New England Representative: J. S. Fallow & Co., New Bedford, Mass. | Canadian Representative: J. S. Fallow & Co., Montreal

Exploring

The Textile Community

This Community Is a Memorial To a Farsighted Mill Man

▶ When the late Robert W. Boys bought Green River Mills in 1933, he took over an acute problem in community relations. This report tells what 20 years of human engineering has done to restore the village of Tuxedo, N. C.

By MILDRED BARNWELL ANDREWS

TWENTY years is not a long time when it measures a great volume of accomplishments—particularly when that accomplishment has been the restoration of a community in both the physical aspects of the town and its chief business and the psychological development of the folks who live there.

That's what has happened at Tuxedo, N. C., since Green River Mills was purchased by the late Robert W. Boys in 1933.

In this, the 20-year anniversary of Boys management, old-timers like me marvel at the progress of one of the industry's most ambitious programs in community and human relations.

Before 1933, hard times had been known in the village of Tuxedo for many years. The village was in the mountains, far from the teeming industrial centers of The Piedmont. A little mill of about 8,000 spindles—the only hope of a cash income for the villagers—had struggled along with obsolete machinery, trying to squeeze out profits by wage rates somewhat lower than its competitors. Finally it had given up the ghost and closed down. The people who eked out a bare living in Tuxedo had not had a chance at a life consisting of more than bare mountain existence. They had only a smattering of formal education, and their interests were limited to their shabby environs.

That was the situation purchased along with the mill by the late Robert W. Boys, a man from the "old country," who had spent his American business life as head of one of the largest textile mills in New England.

Green River Mills and the Tuxedo of today are a living memorial to Mr. Boys, who started the reclamation project, and to his son, George W. Boys, now president of Green River, who has carried on the original pattern and broadened the community program with the assistance of his wife, Muriel, and his brother and sister-in-law, Ernest and Norma Boys.

Driving through Tuxedo now, one is reminded of a spruce English village. The well-kept homes blend into the lovely mountain surroundings, and they and the famous apple orchard are peacefully reflected in the waters of Lake Summit. The completely modernized combed-yarn spinning mill and mercerizing plant efficiently operate at full capacity, three shifts six days a week, a record unbroken for 17 years. The mill and the orchard, in the minds of many, are synonymous because during harvest season crates of the fruit are shipped to friends and customers, each apple carefully wrapped in tissue stamped "Green River Mills Combed & Mercerized Yarn."

The original mill employees of 20 years ago, their grown children, cousins, and in-laws make up the 1953 employment roll. And when they are not actually on the job in the mill, they and their families are usually pretty busy with any number of community activities sponsored by the mill.

It takes efficient management and

CONTINUED ON PAGE 184

THESE YOUNGSTERS are among the hundreds who have enjoyed the summer day camp set up by the late Robert W. Boys for the families of Green River Mills employees.

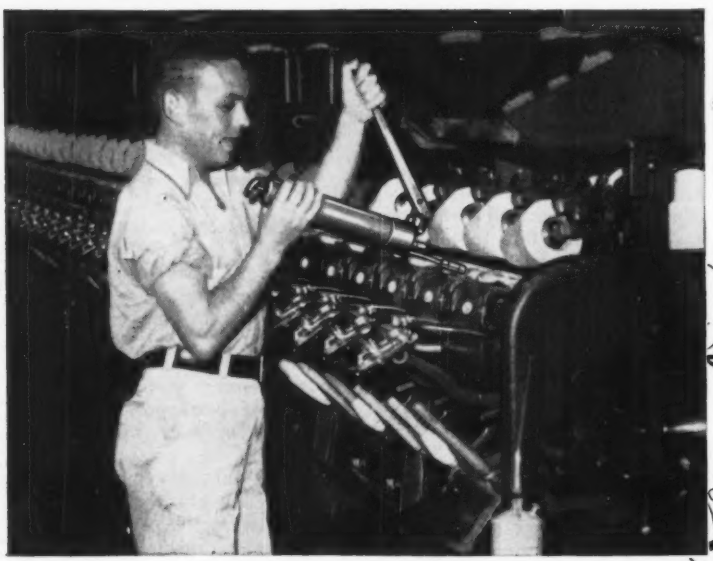
How to cut unit costs..and add to profits!

Time study proves Alemite hand gun loading methods save 3¾ hours per 100 pounds of lubricant used

But, the 3¾-hours' saving is only the beginning! You also save on bearing replacements, costly repairs and downtime. Because only clean, fresh lubricant goes from drum to gun to bearing. Your machines can operate at peak efficiency—produce more per hour, more per dollar.

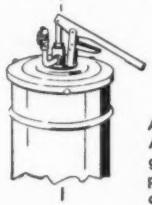
Alemite Hand Guns are equipped with a loader fitting which permits clean, quick mechanical refilling in a fraction of the time required for old-fashioned hand and paddle methods. The loader fitting is placed in the nozzle of an Alemite Loader Pump. Then—just 8 strokes of the pump refill a 1-lb. capacity gun . . . no mess, no waste!

And, there is an Alemite Loader Pump to fit any standard lubricant container you normally use—stationary models for 100-lb. and 400-lb. drums; portable models for 25-lb. or 35-lb. pails. These pumps keep original containers sealed tightly—prevent contamination, help reduce fire hazards.

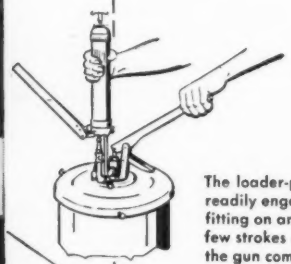


With Alemite Plan "A" Only Refinery Clean Lubricant Reaches Machines

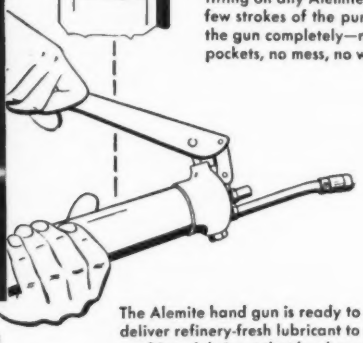
A drum of general purpose lubricant arrives in the oil room—clean, fresh from the refinery.



As soon as drum is opened, an Alemite Loader Pump for hand guns is inserted . . . completely re-sealing the lubricant against contamination.



The loader-pump nozzle readily engages the loader fitting on any Alemite gun. A few strokes of the pump fill the gun completely—no air pockets, no mess, no waste!



The Alemite hand gun is ready to deliver refinery-fresh lubricant to any machine—lubricant that has been kept free of dirt and abrasives all the way from barrel-to-bearing.

This combination of Alemite Hand Guns and Alemite Loader Pumps is known as Alemite Plan "A." It is one of five Alemite plans that your trained Alemite representative can show you. Ask him to tell you about the colorful, informative new sound-slide film, "No Margin for Error," which will help you and your men cut production costs. No obligation, of course!

ALEMITE
REG. U. S. PAT. OFF.
Ask Anyone in Industry

A PRODUCT OF SW STEWART WARNER

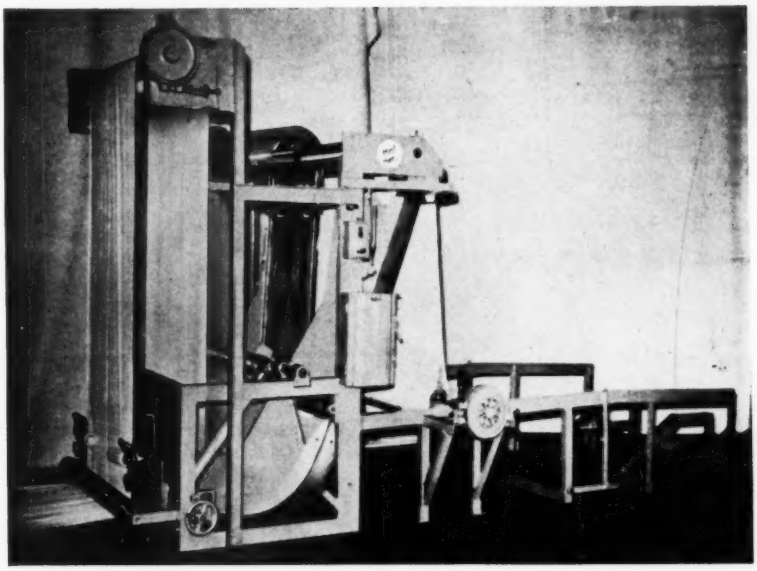
Free! **New Booklet "5 Plans for Better Plant Lubrication"**

ALEMITE, Dept. J-24
1850 Diversey Parkway
Chicago 14, Illinois

Please send my FREE copy of
"5 Plans for Better Plant Lubrication"

Company .....
Name .....
Address .....
City ..... State .....

Mount Hope Develops New Continuous Roll Feed



CONTINUOUS ROLL FEED is a stainless-steel scray with automatic controls to keep a steady flow of goods.

The new Model G continuous roll feed, made by Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass., is said to make it possible for an operator to sew on new rolls of cloth during the continuous top-speed operation of printing machines, frames, etc. In time, labor, and cloth, the device is estimated to save over $100 per machine per shift in many installations.

The continuous roll feed is an automatic scray equipped with controls that maintain a steady flow of goods. A large yardage is stored in a compact space; and hand feeding, uneven tension, dirt, bad seams, and other sources of waste are eliminated.

In operation, the Model G allows an operator time to sew straight seams with even selvages. Goods are never dragged on the floor or exposed to the hazards (streaking, etc.) caused by a slow-down or complete stop-and-start. Another advantage of automatic operation is that dead time is completely eliminated.

The stainless-steel scray is rustproof and easily kept clean. The new nip rolls are nonlapping. Recommended for use with the automatic scray: an adjustable tension device to keep a constant duplicatable tension; and automatic cloth guiders to hold the goods to a constant width.

Circle T-1 on Reader-Service Card

Pilling Tester Gives Results in 3 to 10 Mins.

The pilling tester developed by the Navy has been put on the market by Fabric Development Tests, 185 26th St., Brooklyn 32, N. Y. It was developed for the routine control and acceptance testing of woven and knitted fabrics, and tests, wet or dry, take 3 to 10 mins. Results agree closely with actual pilling in wear.

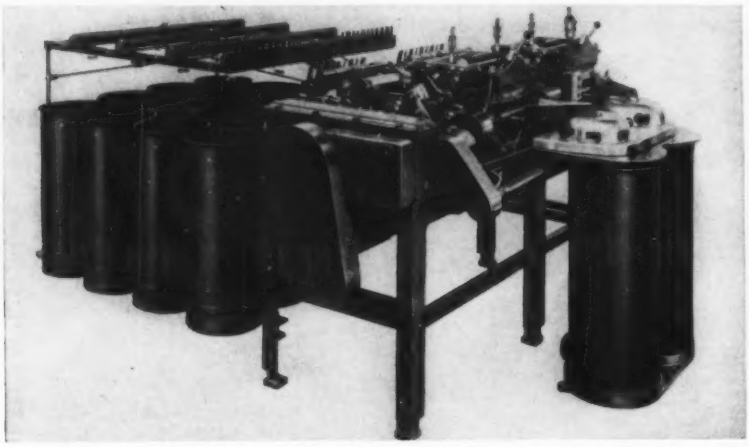
Test samples, under established conditions, are subjected to a combined rolling and twisting surface action. The test cycle is controlled by an automatic-reset electric timer, and a simple device permits quick, uniform mounting of samples without tension. An abradant has been found that is effective and that lends itself to standardization. Results are judged by visual comparison with standards.

Preliminary studies have shown that synthetic and wool-blend fabrics differ greatly in their pilling behavior and that chemical finishes and fulling are important variables. Excellent correlation has been established with actual pilling of tropical, flannel, serge, and melton fabrics.

THIS PILLING TESTER produces a combination rolling and twisting action to give an accurate measure of the pilling behavior of a fabric.

Circle T-2 on Reader-Service Card

Pin Drafter Operates at 55 to 66 Yds. per Min.



PIN DRAFTER can be used for worsted combing or recombing or for the first three or four drawing operations on any system.

EACH HEAD has 52 to 60 fallers, with a pinning depth of 7 5/16 ins. Normal working speed is 55 to 66 yds. per min.

A new high-speed pin drafter for worsted combing and drawing has been developed by Stellite Soc. and is available from Stellite American Corp., 60 E. 42nd St., New York, N. Y. It can be used on the French, Bradford or American system on long- or short-staple animal or synthetic fibers or blends.

Normal working speed is 55 to 66 yds. per min., and up to 98.5 yds. per min. are possible with long-staple fibers. It is possible to deliver a sliver weighing 352 to 395 grains per yard or as low as 28 to 42 grains per yard. Sliver evenness is said to be excellent.

Two heads are standard, with one or two 15x36-in. delivery cans per head—ball delivery if required. The cans can be replaced while the machine is running.

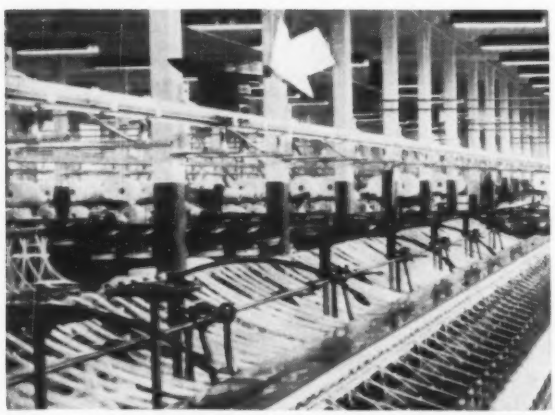
Each head is independently driven, and the heads can be opened without putting the worm screws out of position. Each head has 52 to 60 fallers, and the depth of the working field is $7\frac{5}{16}$ ins. Fallers with $1\frac{1}{2}$-in. pins provide a working depth of $8\frac{1}{4}$ ins.

The speed of the fallers is fixed and is independent of the draft, and the three-roll drafting assembly has an independent drive for each head. A rubber apron carries the feed slivers directly into the pin field.

Stop motions operate when a sliver breaks and when the delivery can is full. A disengaging device on the drafting assembly stops the machine as a result of lapping.

Circle T-3 on Reader-Service Card

New Parks-Cramer Cleaner Is More Powerful



TRAVELING OVERHEAD CLEANER runs on tracks supported from widely spaced lines of posts in this card room. In spinning rooms, the overhead cleaner can be coupled to a frame cleaner.

After a year of successful operation in cotton and staple-synthetics mills, the CTR-7 room cleaner has been announced by Parks-Cramer Co., Fitchburg, Mass. As compared to the older Parks-Cramer cleaners, this new cleaner has a larger motor and pressure pan, which deliver more air at a higher velocity.

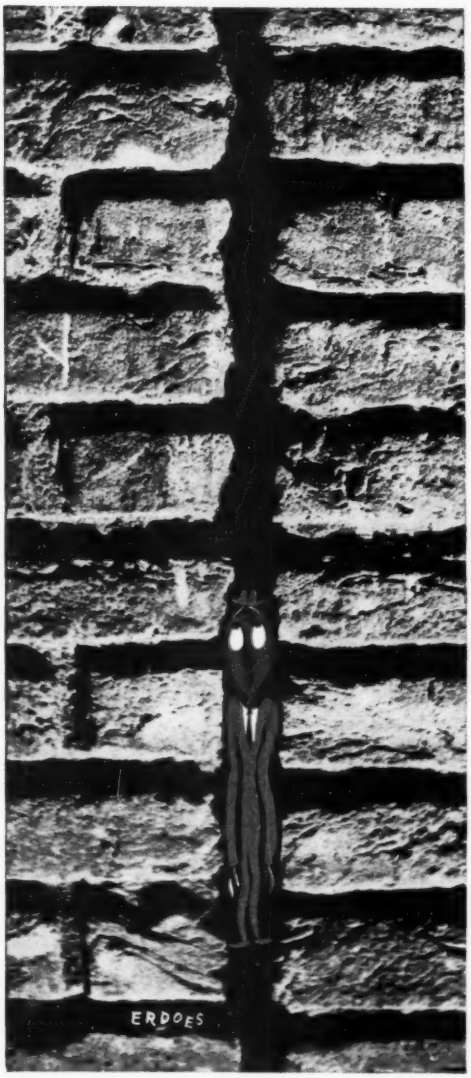
The air distributor contains several separate air outlets, each at a different angle to the vertical. As the cleaner travels along the track, inclined air currents are continuously revolved in a 360° circle about the vertical axis. This "updraft cleaning" feature was carried over from the older models.

Tracks can be installed low and far apart. Posts, walls, and, in some cases, the machines themselves can be used for track supports. In spinning rooms, the room cleaner can be coupled to the Parks-Cramer frame cleaner.

Air distributors are available for each mill area.

Hand blow-down of overhead areas is eliminated in most cases, and maintenance costs are said to be reduced, production increased, quality improved, and housekeeping simplified.

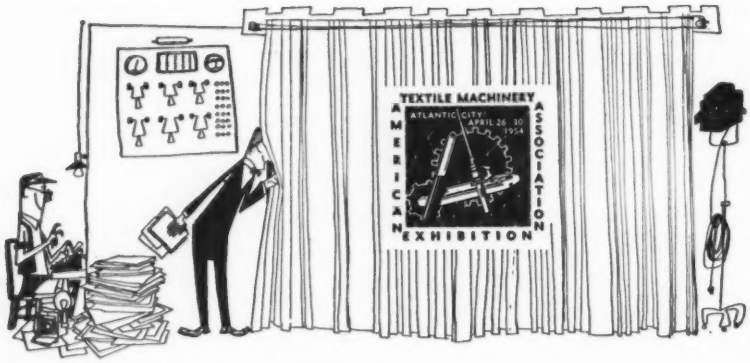
Circle T-4 on Reader-Service Card



squeezed?

Tight production schedules and mechanical breakdowns got you squeezed? It's not a new situation in the textile business. Modern textile machinery is a maze of intricate, mechanical parts that sorely need expert, perfect lubrication. A complete Cities Service line of lubricants for the textile industry can keep these machines on the job for you and contribute greatly toward making production deadlines. Why not talk to a Cities Service Lubrication Engineer with an eye towards improving your operation? Call or write Cities Service Oil Company, Sixty Wall Tower, New York 5, New York.

CITIES SERVICE
QUALITY PETROLEUM PRODUCTS

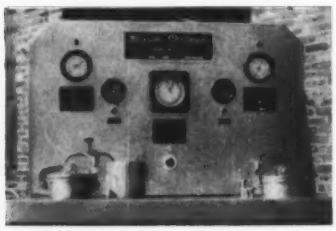


TW has been peeking . . .

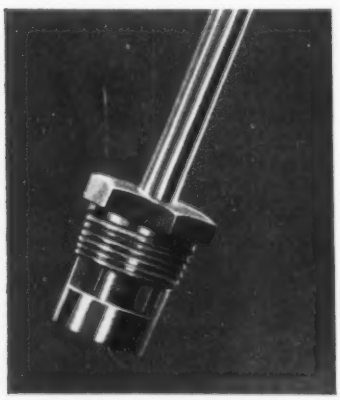
behind the curtain of the April Textile Exhibition

Here's what we saw that you might be looking forward to:

Laboratory Unit and Dye Spindle



LABORATORY UNIT for sample dyeing, extracting, and drying will be demonstrated by Standard Fabricators.



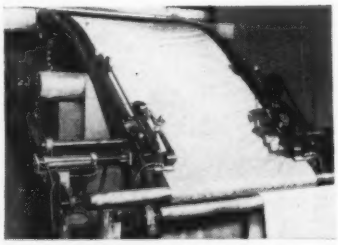
PACKAGE DYE SPINDLE will be another feature of the Standard Fabricators booth.

A complete laboratory unit for sample dyeing, extracting, and drying will be demonstrated by American Standard Fabricators Corp., 355 Walton Ave., New York 51, N. Y. The new package-dyeing spindle developed by this concern will also be on display. This spindle is said to offer maximum flow with minimum resistance.

New Equipment by Cocker

Cocker Machine & Foundry Co., Gastonia, N. C., will have its new high-speed cotton warper on display. Detailed information on this machine is not available before the show. A new rayon warper will probably also be shown, and it is possible that a new slasher will be available in time for the show.

Cloth Guide

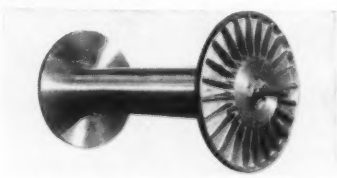


APPLICATION OF PNEUMATIC-HYDRAULIC CLOTH GUIDE on a pin-tenter frame in a woolen mill allows the tenter frame to operate at full speed. Full speed is possible because the sensing element does not touch the cloth and cloth slackness does not greatly affect accuracy. Response to run-outs is fast because the hydraulic cylinders have a low inertia. The cloth guide, manufactured by Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill., operates from the pneumatic sensing device, which blows air across the selvage to indicate the edge position. The hydraulic controller positions the guide rolls in response to the signal. The cloth-guide equipment will be shown at the Atlantic City show.

Machinery Financing

C.I.T. Corp. will have representatives at Atlantic City to answer questions on the installment financing of machinery.

Light-Metal Beams



NEW ALUMINUM BEAM designed to handle nylon on all makes of warpers is an example of the light-metal beams that Hayes Industries, Inc., Jackson, Mich., will show at Atlantic City. This aluminum beam is available with 30- and 32-in. heads, and it has withstood a load test of 263,000 lbs.

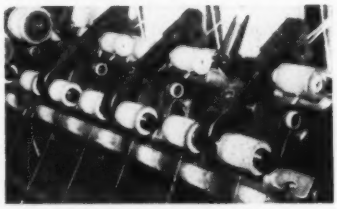
Hotel Rooms Available

There are 27,000 commercial hotel rooms available in Atlantic City. By the middle of January only 2,100 reservations were in.

To reserve hotel accommodations, write—

The Housing Bureau
16 Central Pier
Atlantic City, N. J.

Top Rolls and Saddle

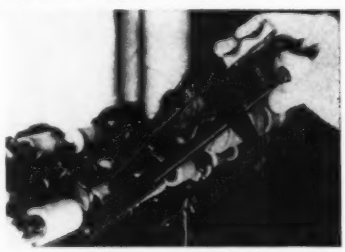


DRAFTING ELEMENTS for spinning and roving frames will be shown by Product Sales, Inc., Whitman, Mass. Items included: Climax ball-bearing top rolls for running cotton, synthetics, wool and worsteds, and blends; Cleandraft nonlubricating back-line top rolls, a nylon roll that is used without oil on the back lines of spinning and roving frames processing cotton, synthetics, worsteds, and blends; and Cleanalign saddle assemblies, a new type of capbarless arrangement used in combination with the front- and back-line top rolls for Casablancas and Roth spinning.

Rings for High-Speed Frames

Herr Mfg. Co., Inc., 318 Franklin St., Buffalo, N. Y., will display a complete range of sizes of Herr conical rings specially designed for high spindle speeds for spinning and twisting all natural- and synthetic-fiber yarns.

Top-Roll Weight Tester



SUREWEIGHT TOP-ROLL WEIGHT TESTER will be shown by Product Sales, Inc., Whitman, Mass. This tester gives a quick test on the top-roll weights on spinning and roving frames. It reads within an accuracy of 1 lb.

New Textile Motor

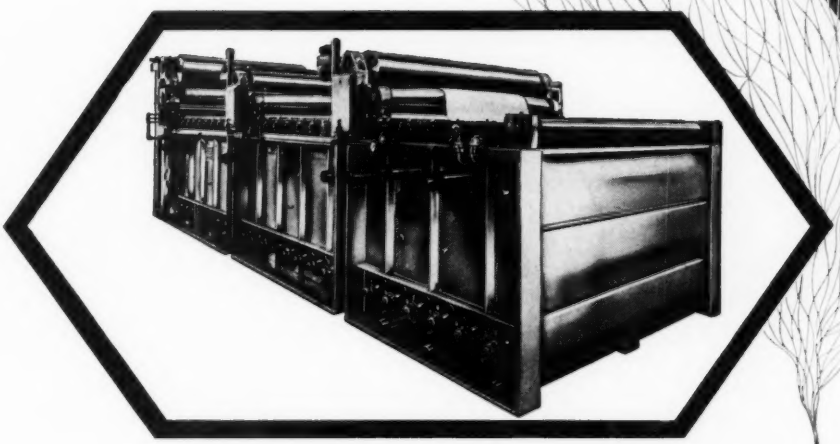
General Electric Co., Schenectady 5, N. Y., will display its new screenless open textile motor. The motor has a streamlined cast-iron construction and a simplified ventilating system with wide air inlets and smoothly contoured fans to provide double-end ventilation.

Watch this page each month for more peeks at the equipment to be shown at the American Textile Machinery Exhibition in Atlantic City next April 26-30.

TEXTILE *Equipment* NEWS

CORDUROY OR MARQUISETTE

run equally
well on
Tensitrol®
Open Width Washers



In continuous bleaching, in pad steam dye ranges, in scouring or boil-off, in washing after resin application, and in other washing operations . . . Tensitrol Open Width Washers are today improving the hand and appearance of many types of fabrics.

As heavy as one yard per pound or as light as gauze, fabrics speed through Tensitrol Open Width Washers with remarkable washing efficiency.

Regardless of shrinkage in process, tension is at a minimum for any fabric, compatible with freedom from wrinkles, creases and tie-ups; the relaxed material being most receptive to the penetrating and flushing action of the agitated liquor . . . even at speeds of 100 yards or more per minute.

We can advise you on the profitable use of patented Tensitrol Washers in the light of actual field results if you will write us a brief description of your process.

Manufacturing Engineers Since 1840

RODNEY HUNT®

RODNEY HUNT MACHINE CO.
66 MILL STREET, ORANGE, MASSACHUSETTS, U. S. A.

Loom Switch Features Push-Button Operation

NEW LOOM-STARTING SWITCH works on single- or multiple-shuttle looms. Features are a lintproof enclosure and vibration-resistant mechanism.

A new push-button loom switch, a Size 0, across-the-line manual starting switch for single- or multiple-shuttle looms, has been announced by The Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn. The switch has a lintproof enclosure with a hinged door protected by a neoprene gasket.

An outstanding feature is said to be the balanced rotary mechanism, which resists shock and vibration far in excess of any met in weave-room conditions. Internally, the mechanism consists of two separate units, the main contacts and the overload tripping device. The overload tripping device has knife-blade contacts, which reduce the chance of short circuits welding the contacts.

The reset lever is within the enclosure which can be locked to limit access to authorized personnel. To prevent unscheduled restarting, the "stop" button must be pushed before the switch can be reset. In addition, a test button gives a check on the overload relays.

By taking out six screws, the switch mechanism can be completely removed without disturbing the wiring.

Circle T-5 on Reader-Service Card

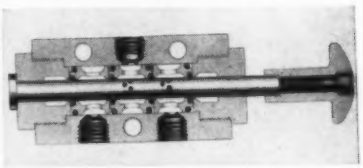
Instrument Tests Fabric Handle in 15 Secs.

The Handle-O-Meter, an instrument developed by Johnson & Johnson to evaluate the handle of a fabric, is now available from Thwing-Albert Instrument Co., Penn St. and Pulaski Ave., Philadelphia 44, Pa. Results agree well between instruments and between operators, and the results agree well with ratings made by skilled evaluators.

An electric strain gauge detects differences that go into the final result, and an electric meter indicates the numerical value of the test. The results do not depend on the human element, and a complete test can be made in 15 secs.

Circle T-6 on Reader-Service Card

Patented Valve In Production



SIMPLIFIED CONTROL VALVE for air or hydraulic service, pressures to 125 psi., temperatures to 150° F., is being manufactured under a new patent by C. B. Hunt & Son, Inc., Salem, Ohio. Principal parts: straight-through bore; gland nuts; ground-and-polished stainless-steel plunger with radial parts; firmly held internal spacers; and two sizes of O rings. Various methods of operation are available.

Circle T-7 on Reader-Service Card

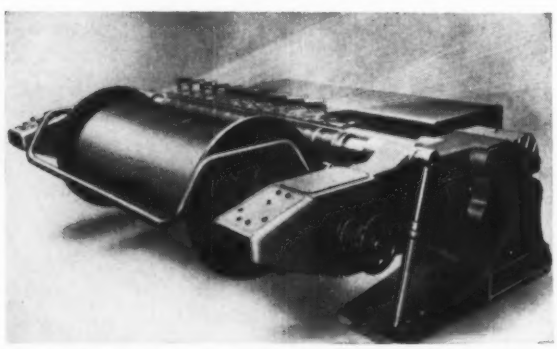
Color-Code Control Plan Cuts Lubrication Mistakes

The Coloroute Plan, a new method of controlling industrial lubrication, has been announced by Alemite Div., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago, Ill. Color symbols are used to control the selection, handling, and application of all oils and greases.

To do the job, Alemite offers: quick-drying lacquer in six colors (spray containers); a set of stencils, each design representing frequencies of application; lubrication analysis sheets, master record cards; and an oil-room identification chart.

Circle T-8 on Reader-Service Card

Electronic Warper Has Hydraulic Jacks and Magnetic Brakes



HIGH-SPEED WARPER has an electronic control that maintains a constant warping speed of 600 yds. per min.

An electronic warper, Type C, has been put on the market by Crowther Ltd., 212 Victoria Ave., Montreal, P.Q. The warper handles two-ton beams from 54 to 84 ins. in width and up to 36 ins. dia. with an 8-in. barrell diameter. Constant warping speed: 600 yds. per min.

The electronic power unit works with a 6-hp. motor and a chain drive to give a positive drive to the beam. A 15-in. magnetic brake stops a two-ton beam in 1½ revolutions of the beam; a 12-in. magnetic brake is also available.

The direction of beam rotation is optional. The beam, pressure roll, and side arms are supported by hydraulic jacks, which can be used to lower the beam to the floor. The jacks are automatically regulated to give a constant level of the yarn sheet going through the reeds onto the beam. Reeds are open or closed zig-zag or fan-shaped.

If the beam is wound backwards, a set of drop rolls can be incorporated at the back to act as a magazine.

Controls: yardage counter; preset electric revolution counter; tachometer with preset constant-speed control; creel off-on switch; and start-stop, inch reverse, fast forward, crawl forward, and jacks-raise and -lower push button controls.

Circle T-9 on Reader-Service Card

TEXTILE *Equipment* NEWS

Feature for feature you can't beat the . . .

New PROCTOR Air Slasher Dryer

HIGH PRODUCTION

Maximum production of quality yarn with capacity varying from 900 to 1500 pounds of dry warp per hour.

CONTROLLED CIRCULATION

Mild, hot air is carried to and away from the warp through patented parallel flow nozzle ducts virtually eliminating warp tangling or rolling.

LARGE HOLDING CAPACITY

Over 22 linear yards of warp makes five passes through the slasher—each pass directly subject to controlled air from an individual duct.

WET SPLITTING OF WARP

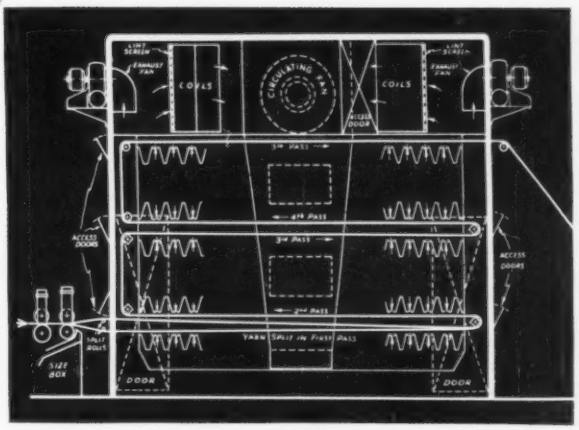
By splitting the warp at the entering end, sticking together is reduced which assists the separating action at the front, in addition to reducing shedding and resulting in higher quality yarn.

EASY TO CLEAN

Complete accessibility to heating coils, fans, air ducts, warp and dryer housing is provided for easy cleaning.

MINIMUM FLOOR SPACE

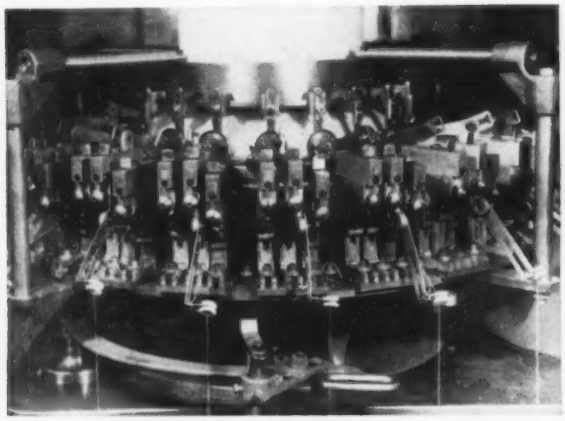
Housing is approximately 14'x12'-6" high x 9'-10" wide accommodating 60' wide warp. Other models are available for wider warps.



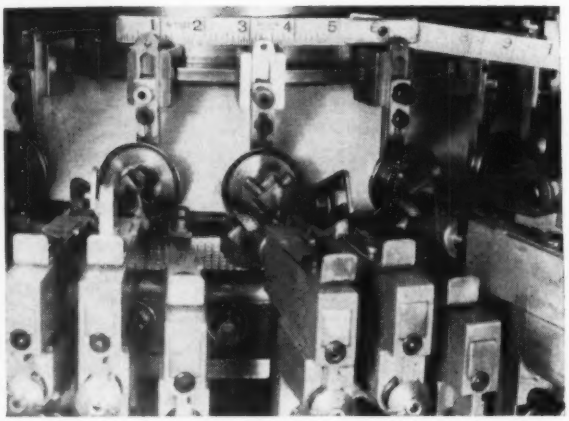
Check the new Proctor Air Slasher Dryer against any other make and feature for feature you can't match it . . . let alone beat it. The features listed here are but a few of the many which place this equipment far in the lead in dollars and cents advantages. The Proctor Air Slasher—developed and guaranteed by the world's largest and oldest drying machinery manufacturer—is engineered and designed in every detail to offer you the greatest number of advantages for the least cost. By any yardstick there is nothing to compare to it. For more detailed information on this latest equipment for slashing write today.

PROCTOR & SCHWARTZ · INC ·
PHILADELPHIA 20 · PA ·

New Feed Units Double Spring-Needle Production



FIVE FEED UNITS fit into a quarter section of a spring-needle machine, but structural interferences keep the number of feeds on a 20-in. cylinder down to 18 or below.



LESS THAN 3 INS. APART, the feed units fit compactly on the spring-needle machine. All operating adjustments on the precision-made units are made with one Allen wrench.

An adapter ring and new-type feed for double-head spring-needle knitting machines has been developed by Precision Knitting Machine Div., Central City Machine & Tool Co., 503 W. Belden Ave., Syracuse, N. Y. The first conversion units in production are for jersey fabrics.

The feed is composed of a clearing wheel, stitch wheel, and presser. On a 20-in. cylinder, up to 18 of the new feeds can be attached. The company claims to be able to double the present number of feeds on a spring-needle table.

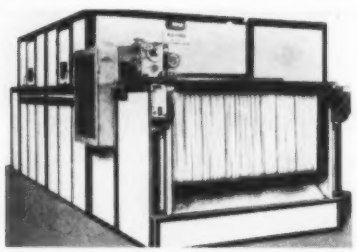
A conversion job includes a stop motion and a take-up conversion to handle the increased production. If desired, the feed units can be chrome-plated for better appearance and cleanliness.

The new feeds can be preset before being placed on the adapter rings. All operating adjustments are made with one Allen wrench. The feed units can be removed for maintenance work on the cylinder.

Complete new machines with the new feeds will be available by the end of the year. These machines are expected to produce 48 ins. of fabric a minute. They can be used for striper work without additional attachments.

Circle T-10 on Reader-Service Card

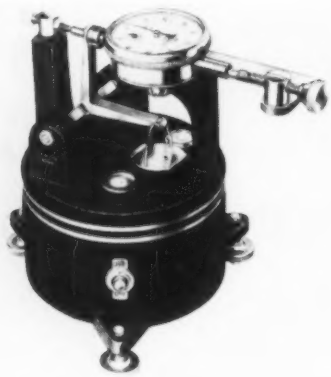
Skein Dryer Dries 1,600 Lbs. Of Cotton or Wool in 8 Hrs.



CONTINUOUS DRYER for skeins has a short drying chamber (5 ft., 6 ins. long) and is said to save time, steam, and power and to produce evenly dried yarn with a soft handle. Made by Fleissner and Sohn, Egelsback, Western Germany, the dryer processes 1,600 lbs. of cotton yarn in 8 hrs. at 212° F. The same amount of wool is dried in 8 hrs. at 140° F. Yarn is closely packed on rods that move forward and rotate; adjacent rods move in opposite directions. Air enters at the discharge end and cools the yarn before being circulated. Humidity is controlled by the speed and temperature of the air.

Circle T-11 on Reader-Service Card

Tester Measures Cloth Thickness



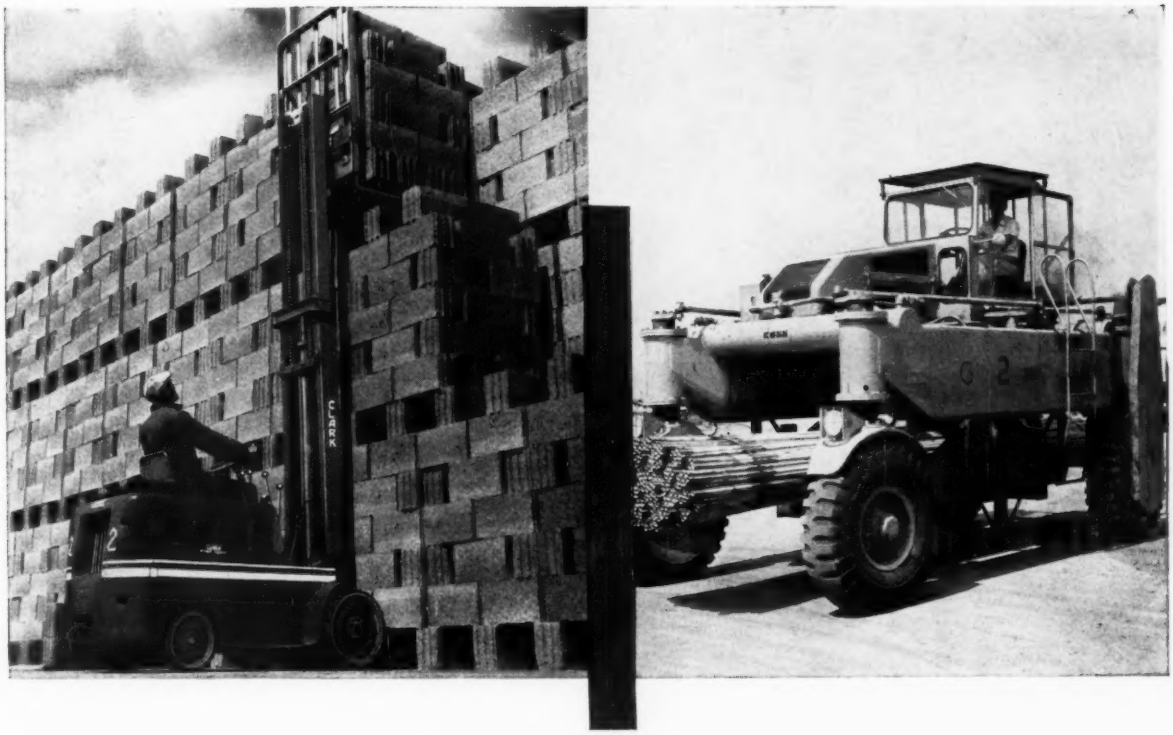
CLOTH-THICKNESS TESTER, made by Reynolds & Branson Ltd., 13 Briggate, Leeds, England, is said to give a precise and reproducible measure of cloth thickness. Pressures from 5 to 100 grams per square centimeter can be applied to the test fabric. Cloth thickness is read directly from the dial.

Circle T-12 on Reader-Service Card

Narrow-Fabric-Loom Quills Made of Molded-Nylon Base

NARROW-FABRIC-LOOM QUILLS are made of molded nylon with outer barrels of anodized or polished aluminum. The quills, made by Plastic Mold & Engineering Co., Providence, R. I., and sold by Ward A. Robinson, 473 Washington St., Wellesley, Mass., will withstand the pressures built up by nylon yarn. The cutaway sections show how the barrel is embedded in the hub.

Circle T-13 on Reader-Service Card



NO CAPITAL INVESTMENT
for your material handling costs
when you use
CLARK'S PAY-AS-YOU-GO LEASE PLAN

Without tying up a penny of working capital, put Clark material handling equipment to work for you. With Clark's pay-as-you-go plan, any of Clark's many models and types of handling equipment is available for your immediate use. With no down payment and at a low monthly cost, this lease plan enables you to:

1. Conserve working capital for other essential needs—such as additional inventory, plant expansion and non-leasable capital equipment
2. Pay-as-you-go rental is a totally deductible expense
3. Eliminate trade-in problems and get the benefit of newest equipment.

No outside financing is necessary—you deal directly with your local Clark dealer who will help you determine what equipment best fits your needs. Gas or electric fork trucks, Powrworker hand trucks, tractors and Clark-Ross carriers—all are available on a 3 or 5 year lease.

Let Clark equipment pay for itself as it cuts your handling costs. Call your local Clark dealer for a discussion of the details which will not obligate you in any way.

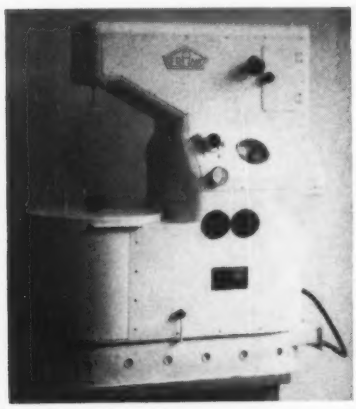
SEE THE YELLOW PAGES OF YOUR PHONE BOOK FOR THE NAME OF YOUR LOCAL CLARK DEALER

CLARK EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 27, Michigan

Four Testing Instruments From Germany

The four testing instruments described here were developed by Karl Frank GmbH., Weinheim-Birkenau, Germany. Three more instruments from the same company will be described in TW's March issue.



Conditioner

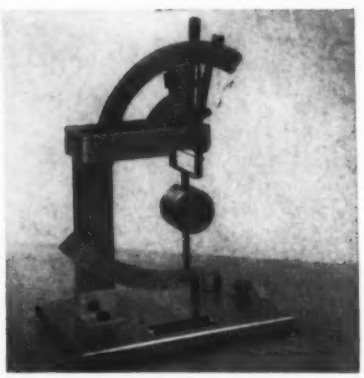
THE FRANK CONDITIONER determines the absolute moisture content in textiles. This determination is speeded up by making the test in a hot-air current, in contrast to the operation of a dryer. The constant flow of air prevents the formation of moist-air pockets. Temperature is held constant by a contact thermometer, set anywhere between 0° C. and 200° C. Precision of the tester is 1/10%.

Circle T-37 on Reader-Service Card

Yarn-Strength Tester

THIS YARN-STRENGTH TESTER is fully automatic. The speed of travel of the testing arm is practically constant irrespective of the load; the speed is adjustable over a wide range (from 1 to 50 to 1 to 100); the return travel is at the maximum speed; and the drive stops quickly in the extreme positions.

Circle T-38 on Reader-Service Card



Bending Resistance Tester

THIS INSTRUMENT is used for measuring the bending resistance (pliability) and the flexural elasticity of fabrics and yarn. The tester measures the bending force that is required to impart a given flexure to a sample. For comparative purposes, the determination of the bending resistance at a 30° bending angle has proved satisfactory. The test can be made under other bending angles by determining, for a given bending force, the corresponding bending angle. The bending angles are read directly from the scale.

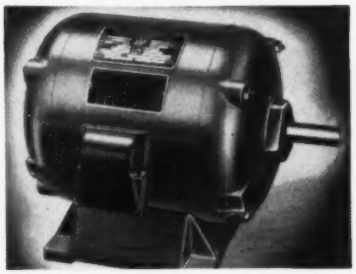
Circle T-39 on Reader-Service Card

Dryer With Pointer Balance

PRECISION DRYER consists essentially of the drying chamber and the balance. The dryer is insulated and can be closed with a door. It works from an electrical outlet. A three-step switch controls heating. In position No. 2, the temperature is held constant at about 150° C. The weighing balance indicates load changes, and the drying process is continuous. The sample weight is the scale reading plus the weights removed; moisture content is the difference between wet and dry weight.

Circle T-14 on Reader-Service Card

A. O. Smith Motors Built to NEMA Standards



A.C. MOTOR in 1½-hp. model is compactly built to the new NEMA standards. Performance is the same as old models.

Integral-horsepower a.c. motors, designed specifically to conform to the new NEMA standards, have been announced by the Electric Motor Div., A. O. Smith Corp., Tipp City, Ohio.

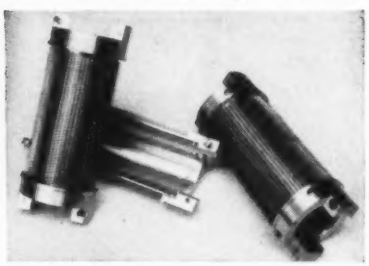
The new motors will be offered in either the present or new mountings. During the transition period, mills can liquidate inventories of belts, pulleys, and accessories.

Initial production will be in 1-, 1½- and 2-hp. ratings in 203, 183, 204, and 184 frame sizes. Performance characteristics of the old and new motors will be equal. Contour lines and styling will be the same; only the physical mounting dimensions will vary according to mill requirements.

The new design has a rolled-steel main frame with malleable-iron base mounting. End frames are cast iron. They are constructed to give maximum ventilation to working parts, yet they meet the requirements for drip-proof applications.

Circle T-15 on Reader-Service Card

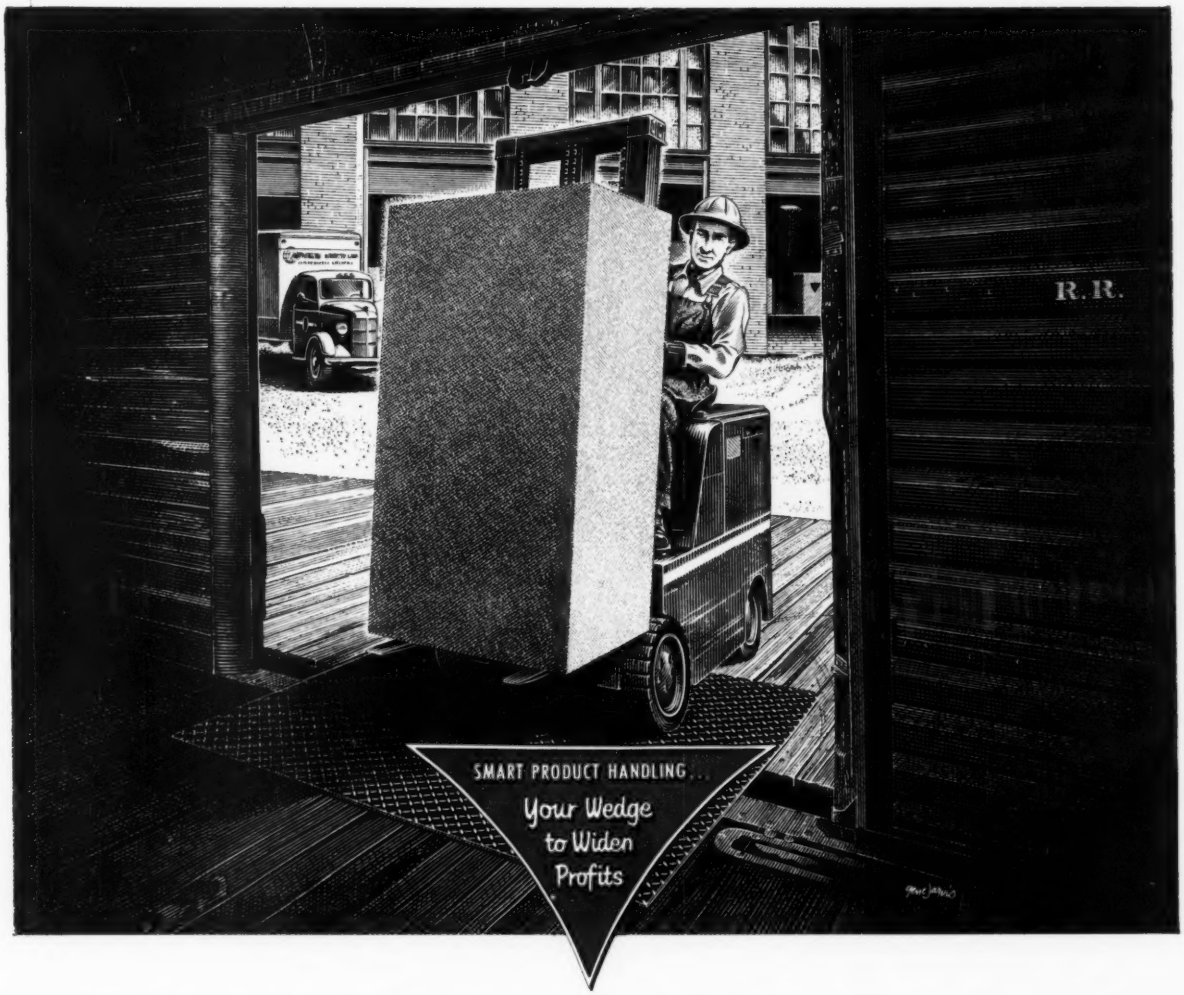
Porcupines Replaced Without Removing the Shaft



SPLIT PORCUPINES for porcupine drawing frames, manufactured by A. Nothelfer Soehne of Germany, are being distributed in this country by Stellite American Corp., 60 E. 42nd St., New York 17, N. Y. A split porcupine can be quickly put on a shaft to replace a damaged porcupine; the shaft does not have to be removed.

Circle T-16 on Reader-Service Card

TEXTILE *Equipment* NEWS



An Expensive Packing Problem Has Disappeared Inside This Gaylord Box

Over-all packing costs were too high. Loading and unloading of freight cars involved too much manual labor. Gaylord solved both these problems with a special box entirely new to the industry.*

Such new Gaylord ideas in corrugated and solid fibre containers may help make your packing and product handling methods as up-to-date as the rest of your plant.

From a ton load of bulk material to tiny tropical fish, the list of products shipped in boxes engineered by Gaylord's Research and Development Division grows larger every day.

For information on the newest developments in your field, call your nearby Gaylord office.

Case history on request

GAYLORD CONTAINER CORPORATION — Gaylord Boxes — General Offices: SAINT LOUIS, MO.

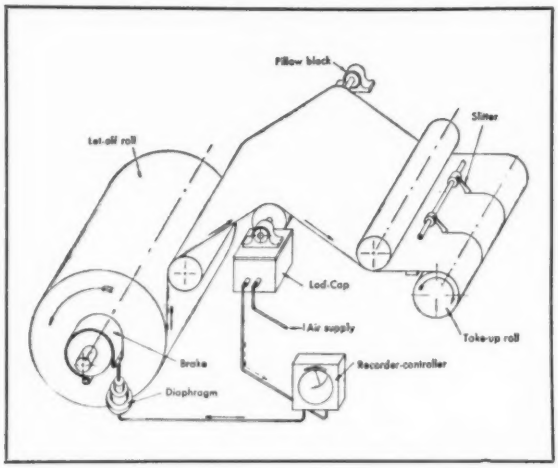
SALES OFFICES — COAST-TO-COAST

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

For Production and Research Men who use

TEXTILE *Equipment* NEWS

Control Device Maintains Winding Tension of Fabric



The Lod-Cap, manufactured by Link Engineering Co., 13843 Elmira Ave., Detroit 27, Mich., automatically measures and controls the running tension of a sheet of material. In textiles, it is used for controlling the tension of fabrics—especially coated, nonwoven, and synthetic-fiber fabrics.

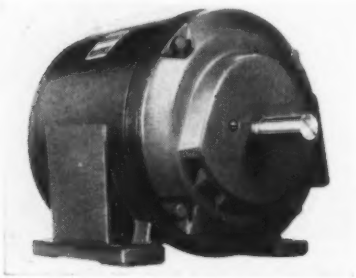
One end of the idler roll is held by a pillow block, and the Lod-Cap, on the other end, uses air pressure to balance the applied load. This balancing air pressure is fed into a recorder-controller; an accuracy of 1/10 of 1% can be expected.

If a rapid fall-off in tension occurs, the let-off roll is stopped instantly through an air diaphragm and brake. To establish the proper tension on the variable-speed take-up roll, the let-off is brake loaded.

TENSION-CONTROL DEVICE balances the load on a rewinder and slitting machine by transmitting air-pressure signals to a recorder-controller, which controls the brake load on the let-off roll.

Circle T-17 on Reader-Service Card

Reliance Motors Built To Latest NEMA Standards



COMPACT MOTOR built to latest NEMA standards, this 1½-hp., four-pole polyphase motor is in a 184 frame size.

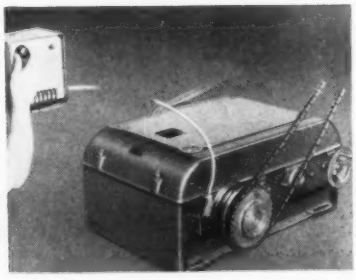
A new line of squirrel-cage induction motors has been announced by the Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland, Ohio. The motors are built to the new NEMA standards.

Research in the fields of new insulating materials, ventilation, heat transfer, and more efficient designs has made possible greater horsepower in more compact space. Research has also led to better protection of the motor windings, leads, and bearings.

The first motors will be built for 1-, 1½- and 2-hp. applications, in frame sizes 182 and 184. The balance of the line, up to and including 30 hp., will be introduced at regular intervals during 1954 and the early part of 1955. The present Reliance a.c. motors will continue to be available during the change-over period.

Circle T-18 on Reader-Service Card

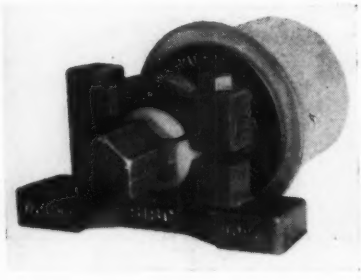
Electric Clutch Improves Reeves Transmission



AN ELECTROMAGNETIC CLUTCH is combined with a variable-speed transmission, made by Reeves Pulley Co., Columbus, Ind., to give controlled acceleration and deceleration, selection of operating speeds while a machine is stopped, and jogging and inching. The clutch can be put on the input or output shaft, and it is available on sizes No. 0, 1, 2, and 3 Reeves horizontal transmission.

Circle T-19 on Reader-Service Card

Improved Expander Bracket Said To Be Easy To Remove



MOUNTING BRACKET for the "free-wheeling" expanders made by Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass., has been improved to save the operator time in removing the brackets from a machine. Adjustment is said to be simplified and rotation easier. The bracket has two elements of malleable iron, with one clamping bolt and nylon ball clamp.

Circle T-20 on Reader-Service Card

Double-Point Flats Put on Any Cotton Card

A new type of double-carding flattop for cotton cards is being manufactured by P. Destombes & Cie, Tourcoing (Nord), France. The flats have two rows of wire teeth with an open space in the center; in other words, each row of teeth has two contact points with the cylinder. With 45 flats working against the cylinder, there are 90 carding points. The double-carding flats can be mounted on any cotton card without modification.

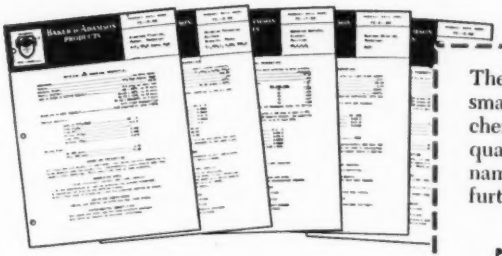
A wider setting, up to a 24, is possible with the new flats; the grinding cycle is 9 to 10 times longer, which lengthens clothing life; the fibers are treated less roughly because of the two contact points; neps are reduced and the web is improved; and the proportion of long fibers in the stripping waste is reduced.

With the new flats, the same count of card clothing can be used with any grade of cotton.

Neps and dead fibers lodge between the two carding points in bundles and the bundles are easily removed by stripping.

Circle T-21 on Reader-Service Card

For Production and Research Men who use High Purity Process Chemicals . . .



YOURS! EXCLUSIVE NEW DATA ON ALL THESE B&A Fine Chemicals

If Your Operations Involve high purity process chemicals, you will undoubtedly want to know more about one or several of the Baker & Adamson Fine Chemicals listed here. Each now has important industrial applications . . . each is worthy of investigation for many other uses suggested by its particular properties.

To Help You make preliminary evaluation of these important new process chemicals, General Chemical has prepared a special data sheet for each. These sheets cover pertinent physical and chemical properties, suggested uses, containers, etc. Since many of these fine chemicals are relatively new to the industrial scene, data on them are frequently not available in standard references, thus you will find these particular B&A data sheets of more than ordinary value.

To Obtain Data sheets on the B&A Fine Chemicals that interest you, just fill out and mail coupon.

REAGENTS B&A STANDARD OF PURITY FINE CHEMICALS

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GENERAL CHEMICAL DIVISION

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SETTING THE PACE IN CHEMICAL PURITY SINCE 1882

The following fine chemicals represent a small cross section of the many high purity chemicals bearing the "B&A" shield of quality. Please put check in box before name of each product on which you want further information.

Product	Data Sheet No.
☐ Acetyl Chloride, Technical	DA-30151
☐ Acid Hydrofluoric, 48% (C.P.) A.C.S.	DA-49791
☐ Acid Oxalic, Anhydrous, Technical	DA-31341
☐ Aluminum Chloride, 32° Baume Solution	DA-83851
☐ Aluminum Fluoride, Powder, Technical	DA-32521
☐ Aluminum Nitrate, Crystal, Technical	DA-32341
☐ Aluminum Sulfate, Hexahydrate, Technical	DA-48871
☐ Ammonium Acetate, Crystal, Purified	DA-32711
☐ Ammonium Fluoborate, Crystal, Technical	DA-32731
☐ Ammonium Fluoride, Crystal, Technical	DA-32671
☐ Ammonium Oxalate	DA-33251
☐ Ammonium Sulfate, Purified	DA-33151
☐ Ammonium Thiosulfate, Solution, Technical	DA-85271
☐ Barium Fluoride, Technical	DA-34181
☐ Calcium Acetate, Powder, Purified	DA-34991
☐ Calcium Chloride, Anhydrous, Purified	DA-49211
☐ Calcium Chloride, USP	DA-35011
☐ Calcium Fluoride, Powder, Reagent	DA-35201
☐ Calcium Phosphide, Technical	DA-35341
☐ Chromium Fluoride, Technical	DA-35771
☐ Chromium Potassium Fluoride, Purified	DA-35791
☐ Chromium Potassium Sulfate, Granular, Photo	DA-35841
☐ Cupric Fluoride, Technical	DA-36481
☐ Cuprous Chloride, Technical	DA-36571
☐ Ferric Nitrate, Crystal, Technical	DA-37441
☐ Ferrous Ammonium Sulfate, Crystal, Technical	DA-37571
☐ Lead Nitrate, Crystal, Technical	DA-38371
☐ Magnesium Fluoride, Purified	DA-39121
☐ Oxamide, Purified	DA-48651
☐ Potassium Acetate, N. F., & Crystal, Technical	DA-40821
☐ Potassium Bifluoride, Technical	DA-41461
☐ Potassium Borate, Tetra, Purified	DA-40771
☐ Potassium Cyanate, Powder, Purified	DA-41591
☐ Potassium Cyanate, Powder, Technical	DA-48821
☐ Potassium Fluoborate, Crystal, Technical	DA-41361
☐ Potassium Fluoride, Anhydrous, Purified	DA-40911
☐ Potassium Fluoride, Crystal, Purified	DA-41041
☐ Potassium Nitrite, Fused, Lump	DA-85521
☐ Potassium Titanium Fluoride	QA-40721
☐ Sodium Fluoborate, Crystal, Technical	DA-42401
☐ Stannous Chloride, Crystal, Technical	DA-43421
☐ Zinc Formate, Crystal, Purified	DA-44441

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GC Allied Chemical

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Allied Chemical & Dye Corporation
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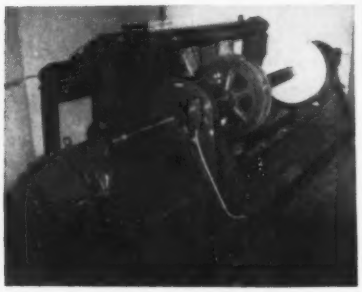
City_____ Zone____ State_____ TW-2

Heavy-Duty Rebeamer Built for up to Four Beams



HEAVY-DUTY REBEAMER, built by Cocker Machine & Foundry Co., Gastonia, N. C., is made in widths to take beams from 44 to 144 ins. between the flanges. For the carpet industry, the rebeamer can be built to take up to four beams. The compressor roll is operated by two air cylinders; pressure is adjustable. The d.c. motor drive is 10 to 25 hp., depending on the size. A differential speed control provides constant yarn speed; an output counter and expansion front comb are standard; drag rolls are optional.

Circle T-22 on Reader-Service Card

Easy-To-Read Hand Tachometer

TACHOMETER has a thumb-operated speed-range selector, which automatically changes the scale numbers and the number of revolutions per minute represented by each division mark; the division marks stay the same for every scale. A built-in calibration scale provides a quick check on performance. Manufacturer: Metron Instrument Co., 432 Lincoln St., Denver 3, Colo.

Circle T-23 on Reader-Service Card

Textile Equipment News

CONTINUED ON PAGE 238

NEW *Dyes* AND *Chemicals*

Aquabond Colors Suitable For Oil-in-Water Applying

Interchemical Corp., Textile Colors Div., Hawthorne, N. J., has developed a new series of resin-bonded colors, known as Aquabond Pigment Colors. These new colors are for printing cotton, rayon, nylon, acetate, and other fabrics. Although the colors can be used in the form of aqueous dispersions, at present they are generally applied in the form of oil-in-water emulsions. They supplement Interchemical's Aridye 400 Series Pigment Colors, which are applied in the form of pigmented water-in-oil emulsions.

Like Aridye colors, the new Aquabond colors provide a wide range of shades possessing excellent all-round fastness properties. They are suitable for machine printing on conventional types of equipment.

Specific advantages of the Aquabond colors include exceptionally sharp marks and smooth blotches. These new colors are said to have excellent limiting qualities. Because they are water dispersible, Aquabond colors facilitate cleaning of print rollers, burnishers, backgrays, blankets, and other equipment.

Circle D-1 on Reader-Service Card

New Nonionic Is More Effective in Alkali

Triton X-102 is a new addition to the line of nonionic surfactants produced by Rohm & Haas Co., Philadelphia, Pa. This product was developed to have improved water solubility, and greater effectiveness in alkaline solutions. It is recommended for the following applications: kier boiling assistant for cotton yarns and fabrics; penetrant and detergent in continuous caustic boil; and as a detergent in the continuous scouring of rayon fabrics.

Circle D-2 on Reader-Service Card

New Vat Yellow Dyes Well at High Temperatures

Carbanthrene Yellow 3GFN Double Paste is a new anthraquinone vat dye made by National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y. It reduces readily to gray leuco at 140°F. and dyes levelly and uniformly in a moderately alkaline bath at 120°F. This dye possesses superior solubility and dispersibility and is recommended for pressure dyeing and pad jig application by the makers. The dye has excellent fastness to all wet processing including boiling soap, chlorine and peroxide bleaching, mercerizing, and cross dyeing. Materials colored with this product exhibit good fastness to light and exceptional resistance to the effects of commercial laundering. This dye is also valuable as a component in mixtures producing a variety of rich browns, tans, taupe, and beige shades as well as a range of pleasing yellow tones.

Circle D-3 on Reader-Service Card

Water Repellent Applied From Water Solution

A new water-repellent chemical for wool and felt products has been developed by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. The product, called Quilon, is water soluble until dried in the goods and so is easy to apply by conventional methods. Though not ordinarily recommended for cotton and rayon, the product is undergoing tests on commercial and experimental scales for draperies, curtains, suiting blends of Orlon, Dacron, and wool, and in rainwear and snow suits of nylon.

Circle D-4 on Reader-Service Card

New Size Works Well On Dacron Filament

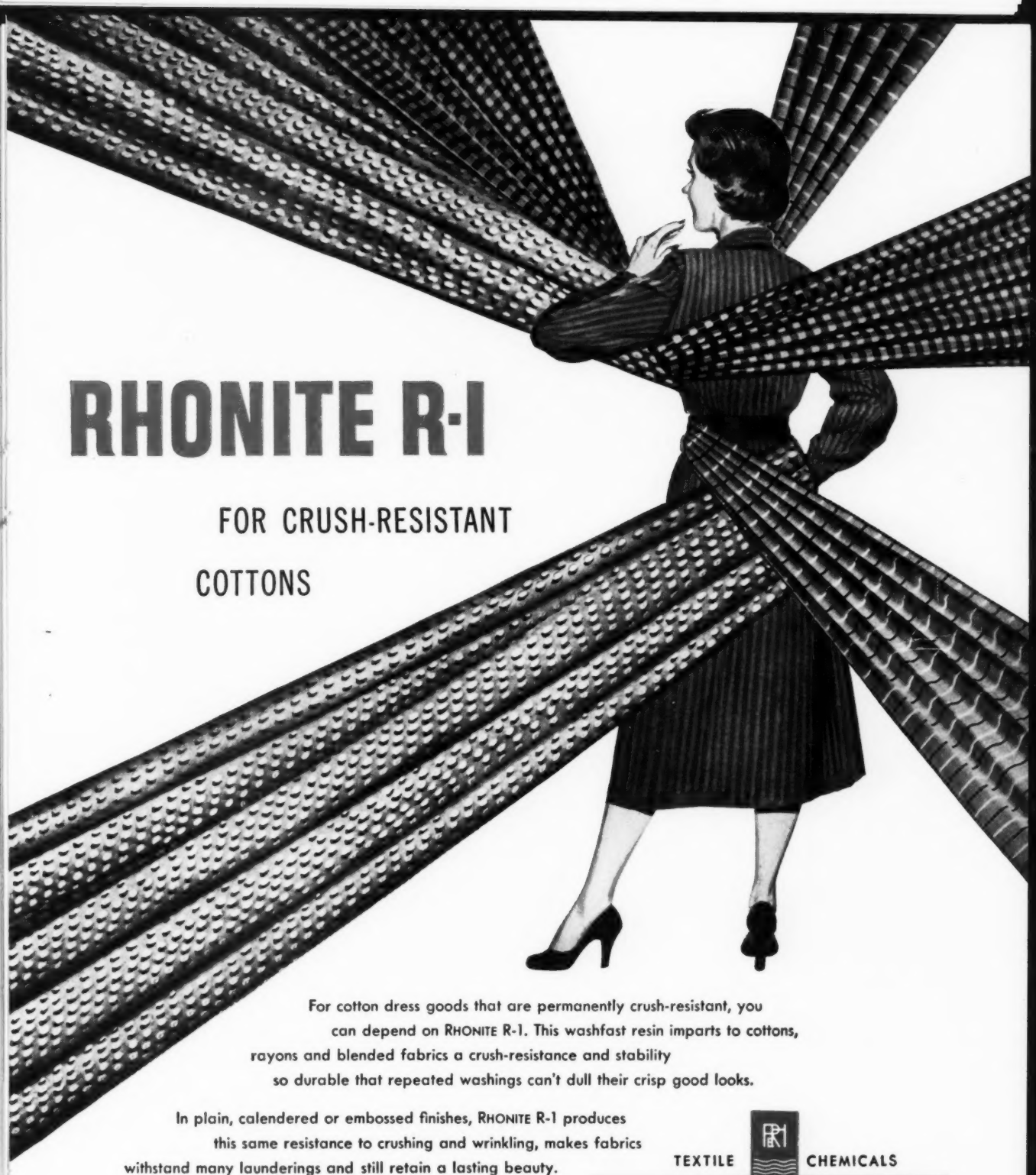
A warp size, tailor-made for the newest filament synthetics, has been developed by Monsanto Chemical Co., Everett, Mass. The new product, Stymer R, has been successfully tested in mills on filament Dacron. Readily soluble in water at 190° F., the product is a free-flowing, easy-to-handle vinyl compound.

Circle D-5 on Reader-Service Card

Two New Blues Added To Calcodur Range

Calcodur Resin Fast Blue R and Blue 6G have been added to the line of resin fast directs made by Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J. The new colors exhibit very little shade change with resin treatment and are said to have good lightfastness and washfastness both before and after resin treatment.

Circle D-6 on Reader-Service Card



RHONITE R-I

FOR CRUSH-RESISTANT COTTONS

For cotton dress goods that are permanently crush-resistant, you can depend on RHONITE R-1. This washfast resin imparts to cottons, rayons and blended fabrics a crush-resistance and stability so durable that repeated washings can't dull their crisp good looks.

In plain, calendered or embossed finishes, RHONITE R-1 produces this same resistance to crushing and wrinkling, makes fabrics withstand many launderings and still retain a lasting beauty.

For unusual crush-resistance, it pays to use RHONITE R-1.

Write or call for complete information about RHONITE R-1—one of the quality chemicals for textile finishing made by Rohm & Haas Company.

TEXTILE CHEMICALS

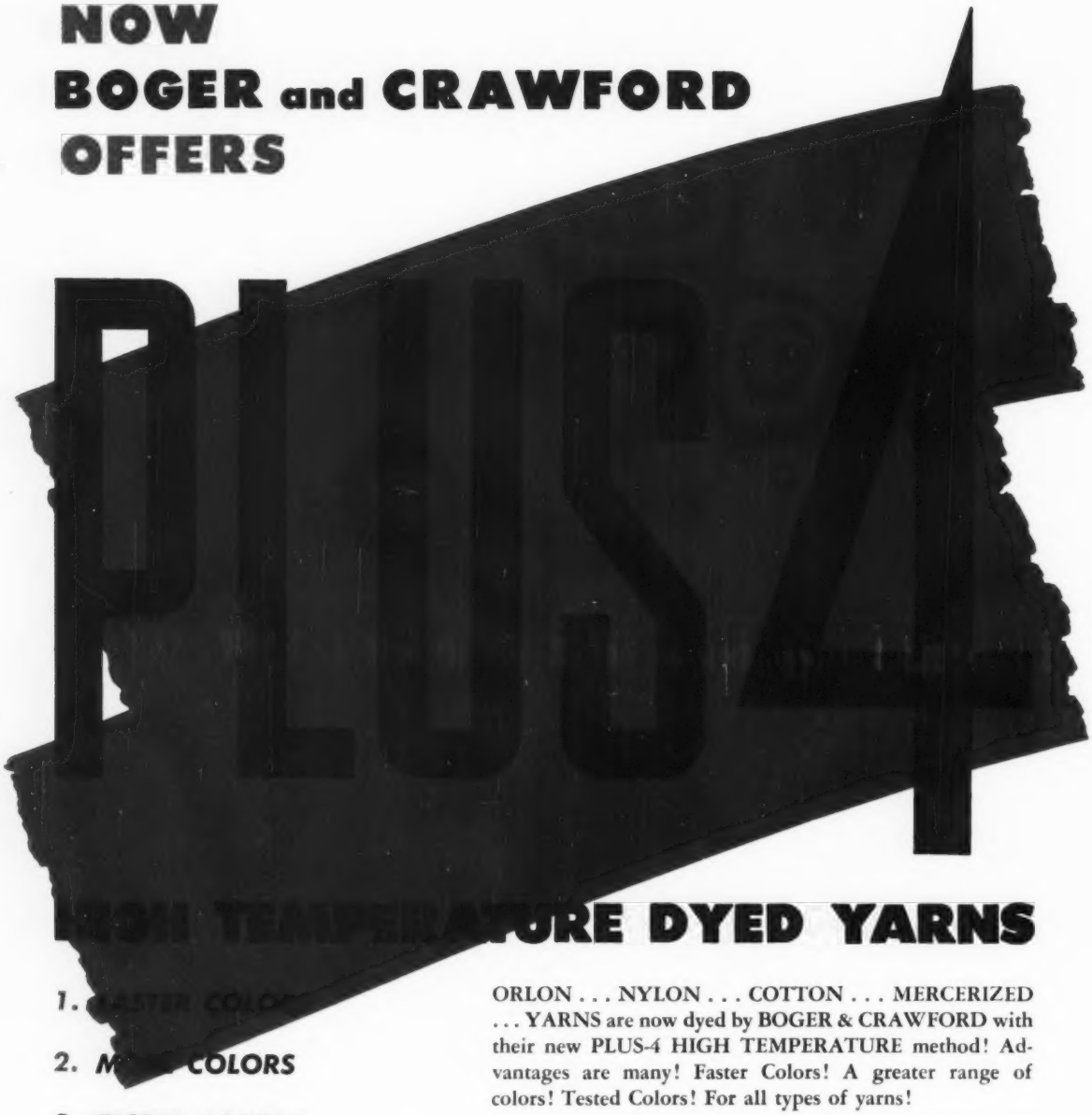
ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHONITE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

NOW BOGER and CRAWFORD OFFERS



HIGH TEMPERATURE DYED YARNS

1. FASTER COLORS
2. MORE COLORS
3. TESTED COLORS
4. FOR ALL TYPES OF YARNS

ORLON . . . NYLON . . . COTTON . . . MERCERIZED . . . YARNS are now dyed by BOGER & CRAWFORD with their new PLUS-4 HIGH TEMPERATURE method! Advantages are many! Faster Colors! A greater range of colors! Tested Colors! For all types of yarns!

Counts: 30/2 to 120/2 inclusive C. P. mercerized as well as 30/1 to 70/1 inclusive Combed Peeler as well as 60/1 to 80/1 and 60/2 to 80/2 spun nylon . . . color fastness equal to or better than Synthetic Fiber Test #1 and #2 AATCC.

Boger & Crawford is also "tops" in bleaching . . . its bleached yarn is *permanent* white, widely used for knitting.

FREE SAMPLES SENT UPON REQUEST. WRITE US TODAY. You will quickly see the advantages of PLUS-4 High Temperature Dyed Yarns.

GUARANTEE
The Quality of Boger & Crawford Yarn is guaranteed — the highest tribute we can pay it!
Signed
Frederick Boger

BOGER and CRAWFORD

"K" and E. VENANGO STS., PHILADELPHIA 34, PA., U.S.A.
SPINNING PLANT— BOGER CITY, N. C.

LETTERS FROM OUR READERS

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

COMMON-ROLL DRAWING IS HELD TO BE BEST

Dear Editor:

The trend is definitely back to common-roll, two-process drawing. Two processes with eight ends up will give the necessary doublings to eliminate doublings in roving and spinning with the use of large-package 12x6 slubbers. This system will pay for itself in a short time and will produce quality yarn at a low unit cost.

Common rolls can be run at higher speeds because of improved cots and anti-friction bearings. Traverse and weight-release mechanisms do not have to be used with the new synthetic roll coverings. The higher production from metallic rolls is offset by the facts that sliver quality is better, the initial cost is lower, and the service life is longer.

The lap-back system with 16 doublings will not be satisfactory until a method of winding and unwinding laps is found that will compensate for variations in tension from start-up to full lap. This variation in tension is magnified in the drawing sliver.

For specialized applications, slip-draft drawing frames do a good job. They are good on synthetic-fiber and combed stock but not so good on carded stock.

A setup that has proved successful in two process drawing is to have a conventional common-roll breaker and a slip-draft frame for finisher drawing. This system does a good job on good grades of cotton, but it doesn't do too well on low-grade cottons and waste mixtures.

For the best performance on all types of stock, I don't think that common-roll drawing can be beat.

R. H. PHARR

Greenville, S. C.

PROCEDURE SUGGESTED FOR NUMBERING CONTROVERSY

Dear Editor:

The adoption of a universal numbering system for textile products has not made any appreciable progress during the past four years. Surveys have been made, votes have been counted, and conclusions have been reached. More and broader surveys should be made, but they should be conducted on more logical lines. I suggest the following three steps, each of which would call for a separate vote.

First step A vote on the type of numbering system preferred
- (a) A direct system
- (b) An indirect (reciprocal) system

Second step A vote on the length and weight units preferred
- (a) Metric units: meters and grams
- (b) Vulgar units: yards and pounds

Third step A vote on the particular numbering system preferred, which fulfills all the conditions imposed by the two previous votes

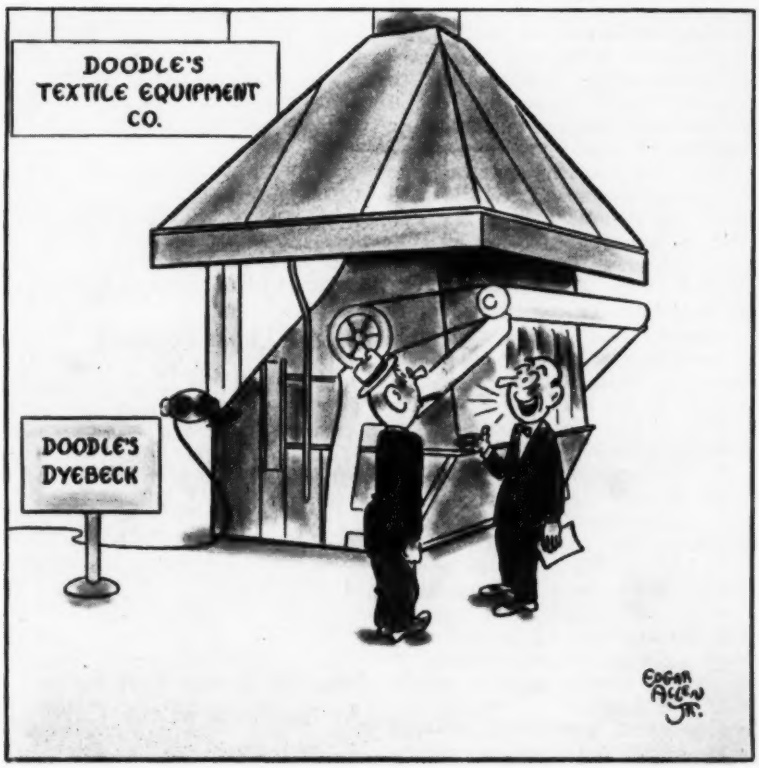
It would be advisable to invite all those interested to write letters stating their opinions on the first part of the problem. After allowing a reasonable time for correspondents to state their cases, a vote could be taken to complete the first step. The same procedure could be used to obtain an enlightened vote for the second and then the third step.

No matter which system prevailed at the final vote, it would enlighten public opinion, clarify most of the issues involved, wean some of the protagonists on all sides from their pet woolen cuts and runs or their cotton hanks and skeins, and maybe enable them to view this eighty-year-old, unsolved problem from a broader point of view.

SQUIRE BLACKSHAW

Montreal, Canada

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"—And another advantage of this model: if things ever get tough, you can always convert it into a hot dog stand!"

Questions AND Answers

Tricot Samples Can Be Quickly Set

Technical Editor:

We knit tricot fabrics but do not finish them. When we make samples, we cannot evaluate them correctly in the gray. When we send them out to be finished, several days elapse before we get them back. Can we finish them on the spot so that we can make our knitting adjustments on the same day? (9729)

One mill solved this problem by setting the samples on a round tin and placing the tin in boiling water [TW, Feb., '53, p. 172].

Dry heat can be used to set small samples. The equipment necessary is a household washing machine and an electric oven with a thermostatic control and a thermometer.

Scour the sample in the washing machine for 20 mins. at 160° F. with a good synthetic detergent. Rinse the sample thoroughly, squeeze it between absorbent paper, allow it to dry at room temperature, and stretch it on a small tenter frame.

For 40-den.-nylon samples, raise the oven temperature to 418° F. and enter the frame for about 13 secs. Use the same time for Dacron samples, but lower the temperature to 383° F.

To test for the correct amount of setting:

1. Place a 12x12x$\frac{1}{8}$-in. duraluminum sheet on the fabric.
2. Mark the fabric at each corner and twice along each side of the sheet with indelible ink.
3. Lay the fabric in water at 120° F. for 30 mins.
4. Squeeze the fabric between absorbent paper.
5. Lay the fabric flat on a wire mesh screen to dry without tension.
6. Smooth the fabric out, and take the measurements. Calculate the average shrinkage by adding the shrinkage walewise and coursewise and dividing by two.

Heat setting is considered adequate if the calculation shows 2$\frac{1}{2}$% or less shrinkage.

A less scientific method is to cut a 5-in. strip from the fabric and make cuts 1$\frac{1}{2}$ ins. deep at $\frac{1}{2}$-in. intervals. If excessive curling does not occur, the fabric can be considered set.

How Typewriter Ribbon Is Made

Technical Editor:

What is the best width of loom for typewriter-ribbon manufacture? What cotton is used? What is the daily production? Is the material gummed before cutting? (9735)

Cotton typewriter ribbons are made in width of $\frac{1}{2}$ in. and $\frac{3}{4}$ in. The usual width is $\frac{1}{2}$ in. Some ribbons are woven on narrow-fabric looms with a selvage edge, but there is a strong trend toward using 40- or 42-in. looms and slitting the fabric after weaving. This method is much cheaper and produces a ribbon that is more flexible than ribbon with a selvage edge.

Yarns used for typewriter ribbon are fine, combed, single-ply yarns spun from Egyptian or Pima cotton. The yarn numbers range from 78s to 120s, and the yarns per square inch of cloth range from 260 to 400. The weight of 42-in. cloth is 5 yds. per lb.

The maximum ribbon-thickness requirement is 0.005 in. The ribbons are gummed after cutting from the full width.

A narrow-fabric loom with 20 battens can operate at 250 ppm. and produce about 775 yds. of $\frac{1}{2}$-in. ribbon in 8 hrs. A 42-in. loom weaving at 160 ppm. with 90 ppi. will produce about 24 yds. of cloth in 8 hrs.

92-In. Loom Needed To Weave 84-In. Cloth

Technical Editor:

We have only 82-in. looms but want to weave cloth 84 ins. wide. What is the best width of loom to use? (9744)

Cloth 84 ins. wide is beyond the range of an 82-in. loom. To weave 84-in. cloth, a loom 92 ins. between lay swords would be necessary. This loom is wider than those commonly used.

How To Comb Flat Strips At the Back of the Card

Technical Editor:

We would like to have a procedure for combing flat strips at the back of the card and feeding them back to the card with the lap. (9680)

1. Remove the flat comb, spiral brush, hackle, Thompson roll, and drive from the front of the card.
2. Remove the two back flat stands from the back of the card.
3. Replace the left-hand back flat stand with a right-hand front flat stand, and replace the right-hand back stand with a left-hand front stand. This arrangement will bring the comb drive on the correct side of the card.
4. Combing the strips from the flats must be done on the upstroke of the flat comb because of the reversed position of the knee of the flat wire. The stroke, angle, and position of the flat comb must be adjusted so that the strips fall on a sloping plate over the lickerin to the back edge of the feed roll. If this plate is kept smooth and at the proper angle, the strips will fall by gravity and will feed evenly on the lap.

There will be a slight increase in the amount of trash content of lickerin waste.

Avoid Snarling of 30-Den. Nylon During Warping

Technical Editor:

We are warping 30-den. nylon yarn with 7 tpi. and find that when the warper stops, the yarn snarls between the package and the tension device. When the warper starts up again, the snarl is carried into the warp. What can we do to prevent this snarling? (9738)

These points may help you to avoid snarling of 30-den., 7-tpi. nylon yarn:

1. Use less warping tension. A pinch tension disk tends to back up twist to cause snarling; so it might be advisable to use less tension to avoid backing up twist.
2. Move the supply package closer to the convergence guide and/or the tension device. It is easier for a long balloon to form when the yarn supports are farther apart, and a long balloon makes snarling easier.
3. Use lower tensions in preparing the creel package. A tightly wound package tends to continue to unwind when warping is suddenly stopped.
4. Use snubbing tension devices. They do not back up twist as much as tension disks. However, there is the possibility of warp streaks when snubbing devices are used because of un-

even and varying tensions. If cones or tubes are used as the supply packages, streaks will be minimized.

5. Single-end sizing may hold the twist satisfactorily without any further equipment changes. Take care in subsequent heat-setting and scouring operations so that the size is not "set" in the cloth.

6. If these steps are not satisfactory, twist setting can be used. Twist setting should be performed at the mildest conditions that will give sufficient deadening of the yarn and penetration to the inside of the package. This operation should be controlled carefully to avoid differences in residual shrinkage between packages and between the inside and outside of one package. These differences can cause warp streaks.

Racked Effect Can Be Knitted on Circular Ribber

Technical Editor:

How can I make a racked effect on small-diameter rib knitting machines without racking attachments? (9731)

A pattern repeat of two feeds is necessary to make this tubing. Thread the odd feeds with cotton yarn and the even feeds with filament-rayon yarn.

Set the cylinder cams on odd feeds to knit a tight stitch and the dial cams to knit a slack stitch. The even cylinder cams are set to knit the rayon yarn with a slack stitch, and the dial cams are set at the welt position.

All cylinder slots are filled with needles, and alternate needles are omitted from the dial. The gaiting (relative position of the dial needles to the cylinder needles) is set away from the central position.

Shrinkage Variation Is Less on Bleached Goods

Technical Editor:

We are having difficulty in obtaining uniform shrinkage of 110x60 broadcloth when we use rubber-belt shrinkers. The variation of 2.5% in the warp is only slightly reduced after kiering and bleaching. What variation is expected, and how can we reduce the variation? (9730)

One mill gets a normal shrinkage variation of about 1% by bleaching and mercerizing goods before the shrinking process. There is no problem when goods are shrunk to zero shrinkage. The shrinkage can vary ½% either way without causing difficulty.

These pointers should help to reduce shrinkage variation:

1. Check loom-to-loom variation of warp tension with a tension meter.

2. Equalize tension on slasher beams.

3. Keep stretch at the slasher below 3%.

4. Check variations in yarn twist.

Specific Humidity Is For Accurate Calculations

Technical Editor:

What is the difference between absolute humidity and specific humidity, and when are they used? (9710)

Absolute humidity is the weight of water vapor per unit volume of air in pounds per cubic foot or grains per cubic centimeter. Specific humidity is the weight of water vapor per pound of dry air. This weight can be given in pounds or grains.

These terms may sound alike; but one measures humidity in relation to air as it exists, while the other measures humidity in relation to dry air. Absolute humidity is generally used for approximate figuring, while specific humidity is essential for accurate calculations.

Relative humidity cannot be used in making calculations because it is a percentage figure of the amount of air at a given temperature compared to what that air could hold at the same temperature.

How the Continuous Doffing Cycle Works

Technical Editor:

How does the continuous-doffing cycle work as described in "Standardize Your Methods to Make Better Ducks" [TW, Sept., '53, p. 222]? (9741)

A timestudy is made of the running time between doffs of the various yarn numbers. Then the yarns are placed on the spinning frames so that the frames are doffed one next to the other right across the spinning room.

Each frame is doffed twice each 8-hr. shift. When the doffer gets to a frame that is to be doffed, he doffs the bobbins whether they are completely full or not. This doffing method means that the size of doffed packages are not uniform, but all spun yarns are rewound on an Abbott winder so that it does not matter.

With this system of spinning-frame doffing, there is no lost time caused by frames waiting to be doffed; and the doffer's time is scheduled to prevent lost time.

Sizing Is No Cure-All For Warp End Breakage

Technical Editor:

We are having a lot of trouble with ends breaking on ticking run with 14s warp and No. 12 reed, six ends per dent, 58 ppi. Could you suggest proper sizing to overcome this problem? (9732)

A good size formula for the 14s warp is:

210 gals. water
300 lbs. thin-boiling starch
33 lbs. Sayco 15
10 lbs. tallow

The warp should be slashed with no more than 5% stretch and 7% moisture content. The yarn should retain between 10 and 12% size. About 5 lbs. Japan wax added to the formula will reduce shedding of the fibers.

Correct sizing may not solve your problems. Too much tension on the warp at the slasher or at the loom may weaken the yarn. The yarn may be scorched and brittle. The size may not penetrate the yarn, or there may not be enough size to form a protective coating.

The trouble may be in the loom. The take-up roll or the whiproll may be too high, which would cause an excessively tight bottom shed that strains the yarn. The harnesses could be timed to cross too far from the fell of the cloth and cause unnecessary chafing of the yarn.

Try these suggestions:

1. Prove a good size formula that gives maximum penetration with a minimum of shedding at the slasher and the loom.

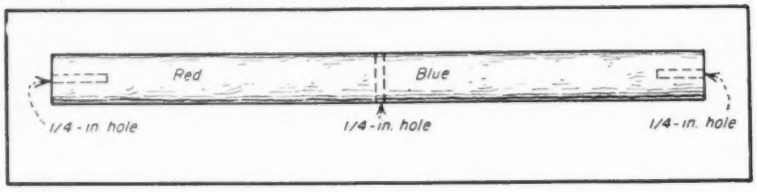
2. Make a series of tests at the looms, trying different settings of the parts such as the take-up roll, stop motion, whiproll, and drag roll.

3. Make experiments with different timings and settings of the harness or shedding motion and the picking motion.

4. Check the reed for rough spots. Select a reed that is best for your construction, and make certain that the reed has sufficient air space.

Kinks AND SHORT-CUTS

Old Broomsticks Make Good Loom Flags



BROOMSTICK SECTION is simply placed on a wire on the loom arch to flag a loom.

Our weavers used to use two or more full bobbins of filling to flag looms for loomfixers and cloth doffers. This practice resulted in dirty filling because the bobbins were often dropped on the floor and were soiled by dirty hands.

We now flag looms with flags made from old broomsticks. The broomsticks are cut into 12-in. lengths. Holes of ¼ in. dia. are bored in each end and in the center of the sticks.

One end of the stick is painted red down to the center hole. The other end is painted blue.

A 6-in. length of heavy wire (old top-harness wire usually) is bent in a circle at one end so a bolt can hold it and then bolted to the arch of the loom. The point of the wire is then bent straight up.

When a weaver needs to flag a loom for the loomfixer, he places the broomstick on the wire with the red end up. To call the cloth doffer, he places the blue end on top. The center hole of the stick rests on the wire when looms are not flagged.

Since we have been using the broomsticks for flags, we have greatly reduced the soiled filling in our weave room. *Bernard Dixon, Danville, Va.*

Cover Looms With Vinyl To Prevent Soiling

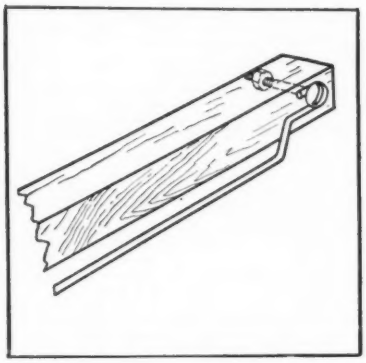
Our silk and rayon warp yarns and woven cloth on our looms used to become soiled by weavers' or loomfixers' hands.

To prevent soiling warps and cloth, we have covered all warp beams and the woven cloth from the breastbeam of the loom to below the cloth roll with clear vinyl sheets. The sheets are tied to the looms with pieces of twine and are easily removed to repair broken warp ends or for other reasons.

Since the vinyl sheets are transparent, we can see warp defects when they appear and can also inspect the cloth as it is woven. The sheets prevent the warps and cloth from becoming soiled. *Hokao Fukaya, Japan.*

VINYL SHEETS over the warp beam and also over the woven cloth prevent these materials from becoming soiled.

Fasten Shuttle Guard Wires With a Bolt for Safety



THE LAG SCREW is removed from the handrail, the hole is bored all the way through the wood, and a loom bolt is put in the hole to hold the guard wire.

The shuttle guard wires attached to the lays on many types of older looms are held to the handrail with lag screws.

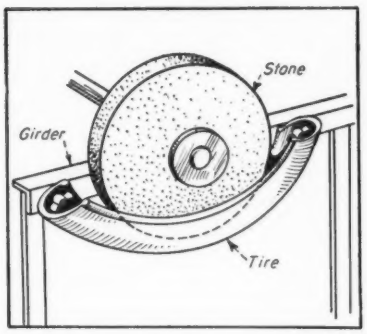
The beat-up of the loom causes the lag screws to come loose, and they often fall into the warp and make break-outs. Besides, there's always danger that a shuttle will be thrown out of a loom when a guard wire is loose and cause a serious injury to an employee.

We have removed the lag screws from all our looms and replaced them with loom bolts. To put in the bolts, we bore the lag-screw hole all the way through the handrail. The head of the bolt is put through from the front of the loom, and the head holds the guard wire in place. A washer and nut at the back of the handrail hold the bolt secure.

We tighten the nuts when warps are out at the same time we tighten the looms generally.

Since we completed this change, we don't have any more break-outs, and our employees can work safely. *Charles D. Westbrook, Trion, Ga.*

Keep Grindstones Wet With Old Auto Tires



THE OLD AUTO TIRE is fastened to the girder holding the grindstone bearings, and water is poured into the tire.

One of our blacksmiths sharpens the tools for all the machinists and mechanics in our maintenance department. He often uses a grindstone in his work and prefers to keep the grindstone wet all the time when he is sharpening delicate tools.

He recently came up with a new idea to keep the grindstone wet with no labor. A short section of an old automobile tire is cut to fit beneath the grindstone and is fastened to the girder holding the grindstone bearings with two wing nuts and bolts.

Water is simply poured into the tire, and the grindstone revolves through it. When the water becomes dirty with grit, the wing nuts are removed and the tire is washed out and replaced. *W. F. Schaphorst, Newark, N. J.*

Best-Kink Award for December

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for December, according to TEXTILE WORLD reader-judges, was:

"Samples Don't Move In Our Crocking Tests"
By L. Laum, Philadelphia, Pa.

Mr. Laum is being sent a check for $25 with the compliments of TEXTILE WORLD.

Signal Light on Bin Keeps Quill Stripper Running

Our quill stripper is automatically fed from a bin in the weave room by a chute that brings the quills down through the floor to the stripper hopper.

Stringy quills often stop up the chute, and the operator of the quill stripper formerly had to go upstairs to untangle the quills and free the chute.

A red light installed above the quill bin in the weave room is now switched on from downstairs whenever a choke occurs. Anyone nearby in the weave room unstops the chute, and the fellow downstairs turns off the light when the chute is free.

The switch is right at the quill stripper; the operator doesn't even have to get up to use it.

Now we have fewer delays at the quill stripper, and stripping production has been increased. *Robert W. Oliver, Reidsville, N. C.*

Watch for Sparks From Aluminum Paint

Painting iron or steel with aluminum paint is a hazardous practice in areas where dust or explosive vapors can accumulate, if the iron or steel is subject to blows from metal objects.

Sparks can be produced when such surfaces are struck by mild steel, brass, or aluminum. Sparks so produced are the result of a thermite reaction in which the aluminum reacts with the rust (iron oxide).

So be on the lookout for this unexpected fire hazard. *Armstrong Trap Magazine*

$500 for Best Kink in 1954

$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

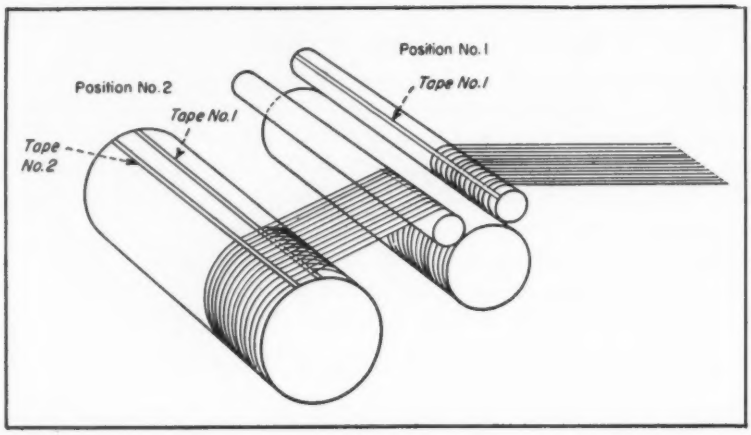
Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

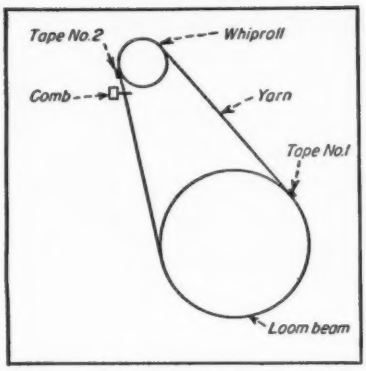
1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1954.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

Prepare Warps at the Slasher To Reduce Tying-in Waste



AT THE SLASHER, masking tape is placed on the yarn at the drag roll at Position No. 1. The slasher starts and moves this tape all the way around the beam to Position No. 2. Then a second piece of tape is placed on the yarn a full revolution of the loom beam away from the first tape. The ends of both tapes are stuck to the loom beam, and the yarn is cut between the No. 2 tape and the slasher.



AT THE LOOM, Tape No. 1 is pulled loose from the beam head, pulled over the whiproll, and stuck to the beam again. The beam is turned clockwise until Tape No. 2 reaches the whiproll. A comb is placed below Tape No. 2 and fastened to the loom. Then both tapes are removed, and the warp is ready.

Before we learned better, we used to waste yards of slashed yarn at the loom in preparing warps for the tying-in machine. We pulled the warp yarn off the beam until the warp was straight and cut off the pulled-off yarn. Of course the pulled-off yarn was wasted.

Now, we know better and prepare warps for tying in while they are still on the slasher.

A piece of masking tape, or other ½-in. tape, is placed over the yarn while the yarn is against the drag roll of the slasher.

The tape is long enough to overlap the yarn 1 in. on each end. The tape is pressed into the yarn as the yarn moves forward to and around the loom beam.

When the tape circles the loom beam, another piece of tape is pressed against the yarn from the slasher at a position near the first piece of tape with a full round of the beam between them. Both pieces of tape are pressed against the loom-beam flanges, and the yarn is cut, leaving both pieces of tape stuck to the beam.

The two tapes prevent the yarn from getting out of position while the beam is stored.

When the beam is placed in the loom, the tying-in-machine operator removes the ends of the tape nearest the end of the yarn, pulls the tape and yarn over the whiproll, passes it down to the beam, and sticks the tape to the beam flanges. Then he revolves the beam clockwise until the second tape reaches a position just below the whiproll. Next, he places a comb in the yarn between the whiproll and the loom beam, and he fastens the comb to the loom at each end.

After the comb is fastened, the tapes are removed and the ends of the yarn are pulled back over the whiproll. Then the warp is ready to tie.

Warps prepared this way are straight, and there's no wasted yarn except that removed after the knotter has tied the pattern and the new warp together.

A Homemade Brush Removes Lint From Looms

It's often hard to remove lint from harness straps, battery disks, gear covers, and other hard-to-get-at places on looms. Brushes made from bristles just won't remove the lint, and steel brushes soon become bent.

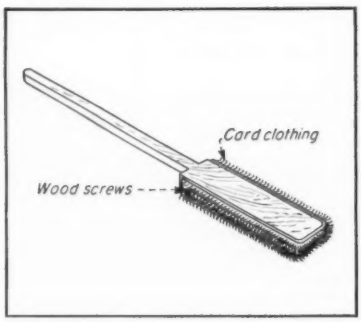
We have made several brushes that do a good job of cleaning these hard-to-reach places on our looms.

First, we cut several 16-in. lengths of ¼x1½-in. hardwood. The full length of each piece of wood is cut down to a ½-in. square except 7 ins. on one end. The 7 ins. left forms the head of a paddle.

A strip of card clothing is fastened to one side of the paddle with wood screws to make the brush, and the brush is ready to use.

This brush is used to clean any part of the loom. When it becomes clogged with lint, we blow it out with a compressed air hose and it's ready to use again.

Be sure to use hardwood; if you use softwood, the screws will pull out. *Charles D. Westbrook, Trion, Ga.*



THE LOOM-CLEANING BRUSH is made from a hardwood paddle covered with card clothing that's held on with wood screws.

Soak Picker Sticks in Oil To Make Them Last Longer

Wooden picker sticks used with reversible pickers on C&K looms have a tendency to dry out and become brittle. As a result, they soon wear out.

We have found a way to make the sticks last twice as long. We fill a 10-qt. pail half full of regular loom oil and put the top ends of new picker sticks in the oil. The picker sticks are left in the oil until they're ready to be placed on our looms.

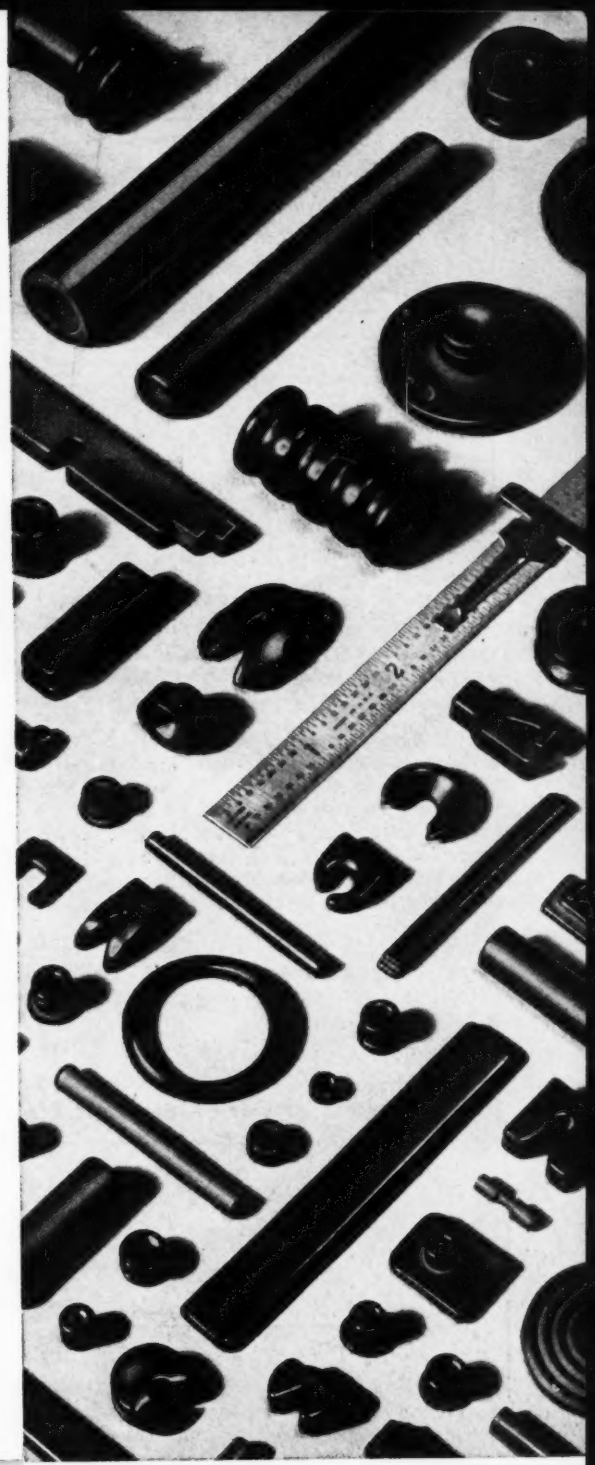
We keep at least a dozen sticks soaking all the time.

Besides making the picker sticks last twice as long, soaking the sticks makes the pickers last longer too. *John W. Lewkowicz, Brockton, Mass.*

ALSIMAG®

THREAD GUIDES ARE UNIFORM

IN DIMENSIONS, MATERIAL AND FINISH



UNIFORM GUIDES MEAN that the yarn travels over the same type of surface, the same amount of surface and in the same position on EVERY GUIDE. This assures uniform results, improved quality, controlled quality.

UNIFORM GUIDES are quicker to install, mean less down time. AlSiMag guides fit your holders perfectly.

ALSIMAG GUIDES ARE UNIFORM ALL THROUGH. These guides are homogeneous, have no surface skin to wear through. No need to worry about undetected yarn damage with AlSiMag Guides.

And AlSiMag guides stay uniform longer because they are so extremely hard and long lived. AlSiMag Guides are uniform from guide to guide and from lot to lot and from year to year.

TEST SAMPLES from our files without charge. Samples made to your specifications at reasonable cost. Test these UNIFORM ALSIMAG GUIDES and let your own records prove that they are by far the lowest in cost per pound of yarn processed.

SEE BOOTH NO. 21

AMERICAN TEXTILE MACHINERY ASSOCIATION EXHIBITION
ATLANTIC CITY APRIL 26-30 1954

YOUR CHOICE OF THREE ALSIMAG MATERIALS

AlSiMag 192 (considered standard) an ivory colored material. **AlSiMag 193** identical to 192 except that it is electrically conductive. Light blue color. **AlSiMag 513** a super-hard super-long wearing material which well justifies its cost in exceptionally difficult applications or where precise finishes must be maintained over long periods. Pink in color.

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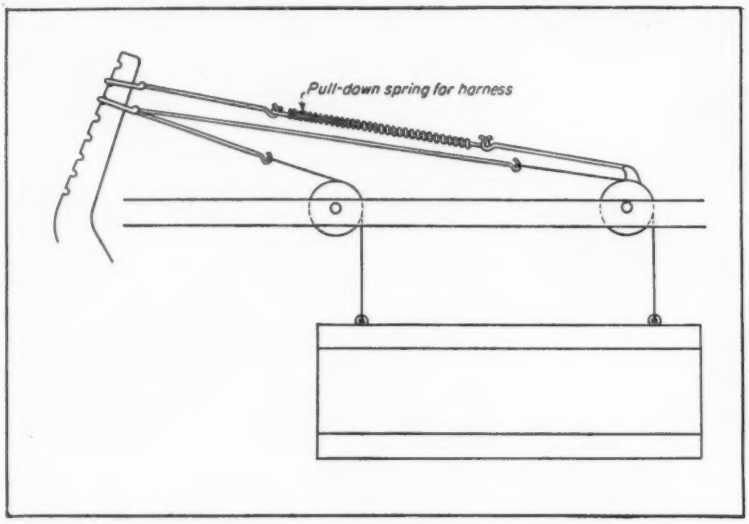
ALSIMAG® 193 guides

(U. S. PATENT NO. 2,369,266)

Illustrated are AlSiMag 193 electrically conductive guides in satin finish. Properly grounded, these guides assist materially in the control of static electricity. The overwhelming majority of the producers and processors of synthetic yarns report this material and finish does the best job for them.

ALL ALSIMAG GUIDES ARE AVAILABLE IN SATIN OR HIGHLY POLISHED FINISH

An Extra Spring Will Keep Harnesses Sturdy



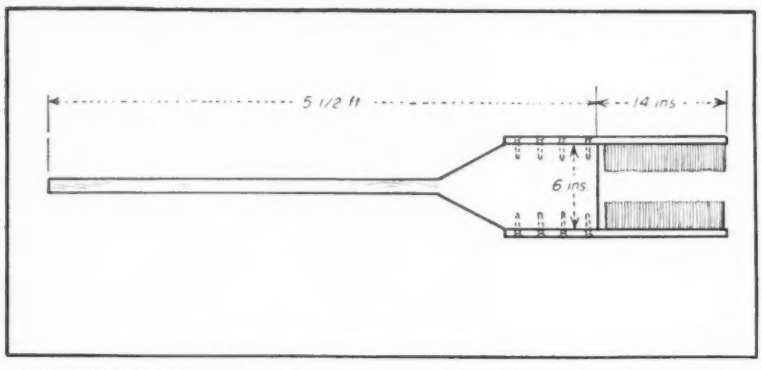
EXTRA HARNESS SPRING is connected to the dobby jack and the harness-sheave stand to stabilize a harness having only a few warp ends.

We weave a lot of cloth with stripes on our looms equipped with dobbies. Many of the patterns on the stripes call for only a few ends to a harness shaft. As a result of this condition, the ends that form the stripe receive severe punishment when the harnesses move up and down; and the ends break excessively.

We now add an extra pull-down spring connected to the dobby jack to correct the condition. An extra jack eye is placed in the dobby jack two notches above the regular jack eye controlling the harness shaft containing the ends for the stripe. A short length of wire (cut from a top-harness wire) is hooked into the jack eye. A pull-down spring is fastened to this wire and is attached to another section of wire connected to the harness-sheave stand on the arch of the loom.

The extra spring stabilizes the special harness, reduces the number of broken ends, and stops ends from chafing. *H. J. Armstrong, Yorkshire, England.*

Brush Keeps Lint Off Fluorescent Lights



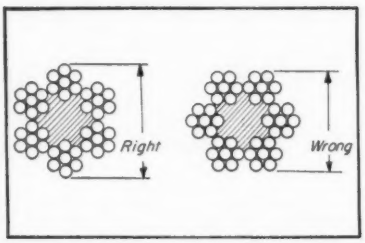
LONG-HANDLED BRUSH cleans fluorescent lights thoroughly and extends the washing frequency.

If you wipe off fluorescent lights frequently, you don't have to wash them as often. Here's a brush we rigged up to do the job.

A 5½-ft. piece of 1x6-in. board is cut in a paddle shape, as shown in the sketch. Two 14-in. rail brushes are attached to the paddle with wood screws as shown.

We brush our lights once a week and wash them twice a year. *J. B. Boyter, Dallas, N. C.*

How To Find the Diameter Of a Steel Cable



THE RIGHT WAY to measure a wire rope is to measure the greatest diameter of the rope with a caliper rule.

If you use steel cable on wire rope, you may want to know the diameter of it for reordering or other purposes.

The correct way to measure this type of rope is to use a caliper rule to measure the greatest diameter of the rope. The greatest diameter is usually the distance from the outside strand or point of one individual twisted cable to the same point of the individual cable opposite it. The correct diameter of a wire rope is called the "circumscribed circle." *W. F. Schaphorst, Newark, N. J.*

Nail Polish Stops Runs In Knitted Rayon Fabrics

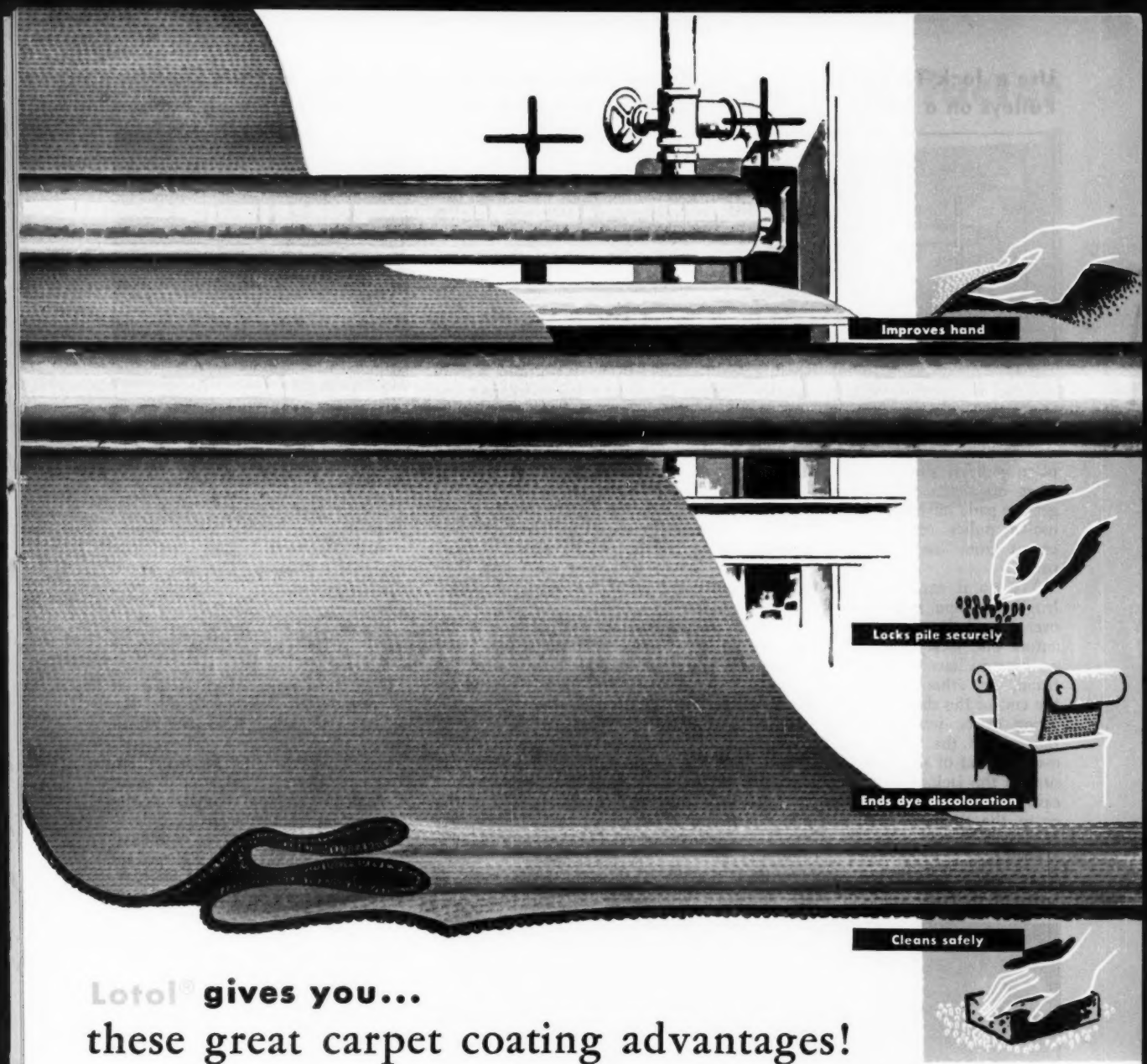
Tension on fabrics made from filament yarns causes runs on the knitting machine when a fault is made or a needle is changed.

We keep a bottle of natural nail polish handy and dab the polish around the fault with a small brush. The polish dries almost instantly and locks the loops around the fault. No long drop stitches appear down the fabric when the machine is started up. *Leonard Maurer, Brooklyn, N. Y.*

Here's a Neat Way To Keep TEXTILE WORLD Material

For future reference, I save all the feature articles and advertising pages of TEXTILE WORLD that interest me.

Here is how I keep them: I dig up the ends of the staples that bind the magazine together with a screwdriver and twist them out with pliers. I take out the pages I wish to file, arrange them in order in one of the monthly covers, and staple them with a hand stapler. This gives me a yearly booklet that I keep on file in typewriter-paper boxes. *Walter A. Simond, Essex Junction, Vt.*



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these great carpet coating advantages!

1. Finer hand and body! Naugatuck's Lotol—a specially developed latex compound—gives carpets greater weight and body, improved resilience, and **lasting** flexibility.

2. Stronger pile locking! Lotol's superior tensile properties lock pile for life—increase locking strength—prevent raveling, wrinkling, and fraying.

3. Outstanding resistance to dye bath! Lotol has minimum effect on dye shades—withstands as much as 8 hours in boiling dye without any discoloration or breakdown.

4. Excellent cleanability! Lotol-backed carpets can be cleaned time and time again without danger of shrinking, odor, or other harmful effects.

Lotol compounds—proven in paints, textile and leather treatment, paper impregnation, and dozens of other uses—are just one of many reasons why Naugatuck is your finest source of latices, for bonding, coating, dipping, or any latex need.

Find out more about Lotol and how it can help you produce a finer carpet, more economically. Write to address below.

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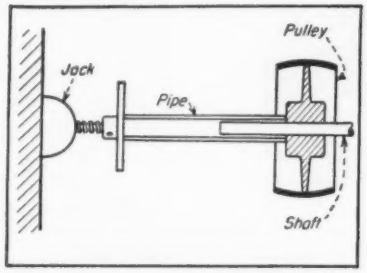
Use a Jack To Place Pulleys on a Shaft



THE PULLEY is pushed along the shaft by a pipe that is, in turn, forced by the pressure of the jack.

In our plant we often have to replace pulleys, sheaves, bearings, and gears on shafts. It's no trouble to get the parts off the shafts because we use a pulley remover; the trouble comes from having to replace the parts.

We do it easily now by using a length of pipe large enough to go over the shaft and a screw jack or automobile jack. The only thing is, we have to have a building side, partition, or other solid surface near the end of the shaft. When this condition exists, we tap a pulley onto the end of the shaft, slip the pipe over the end of shaft, and apply pressure to the jack. The pulley goes on easily without damage to the pulley or to the shaft. *W. F. Schaphorst, Newark, N. J.*

An Exhaust Fan Removes Fumes From Metallizing

We use the metallizing system in our machine shop to build up worn surfaces, refinish roll surfaces, and repair many other worn parts from production machines. We get good results from the metallized parts, but we used to have dust and fumes from the process spreading all over our shop. As a result, it was almost impossible for employees to continue with their work while the metallizing was being done.

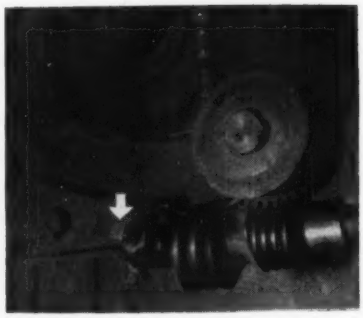
To correct the condition, we installed an exhaust fan to remove the dust and fumes from the machine shop.

We built a metal box with a hinged lid to fit onto the carriage of the lathe where metallizing is done. The lid can be adjusted to any position, depending on the diameter of the part being metallized. To adjust the lid, we loosen two wing nuts and then move the lid up or down in slotted guides.

A heat-resistant flexible hose of 10-in. dia. connects the metal box to an exhaust fan located directly over the lathe. Fumes and dust removed by the fan pass through a metal duct out a window.

The flexible hose lets the metal box on the lathe carriage move with the nozzle of the metallizing process, and little dust and fumes are left in the machine shop. *Alvester Wheeler, Greensboro, N. C.*

Stop Builder-Rack Slipping To Spin Full Filling Bobbins



CAPSCREW holds a piece of wood (in a hole) against the worm shaft of a spinning-frame builder motion to prevent the shaft from slipping, letting off the rack too fast, and making small bobbins of filling.

On our Saco-Lowell filling frames, we had some trouble with slipping of the builder motion. The rack would let off too fast and build small bobbins.

We decided that the spring on the worm shaft was not holding the shaft securely.

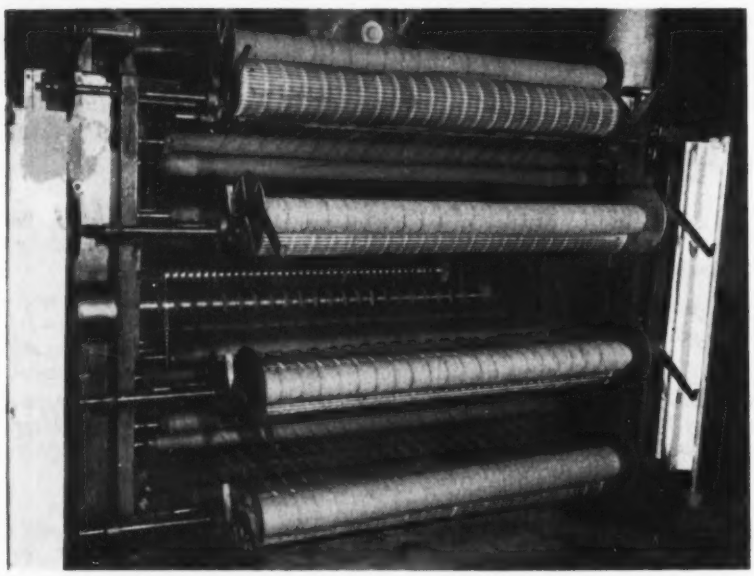
Our remedy was to drill a hole in the worm-shaft housing beside the builder and just behind the worm gear.

We tapped this hole for a ¼x1½-in. capscrew. Then we cut a small piece of wood to the same diameter as the hole and put the wood in the hole.

When the capscrew is tightened against the wood, the wood presses against the worm shaft and holds it. The locking nut on the capscrew is tightened to keep the wood in place.

Our rack doesn't slip any more, and we get full-size filling bobbins. *John H. Newsom, Bemis, Tenn.*

Lights Beside Doffer Aid Woolen Carding



TWO FLUORESCENT LIGHTS—one on each side of the doffer section of a woolen card—improve visibility greatly and help both quality and production by lighting the dark rub-apron area. Apron condition is easier to check, and broken ends are not so hard to find and piece up.

Post Office in Mill Saves Time and Work

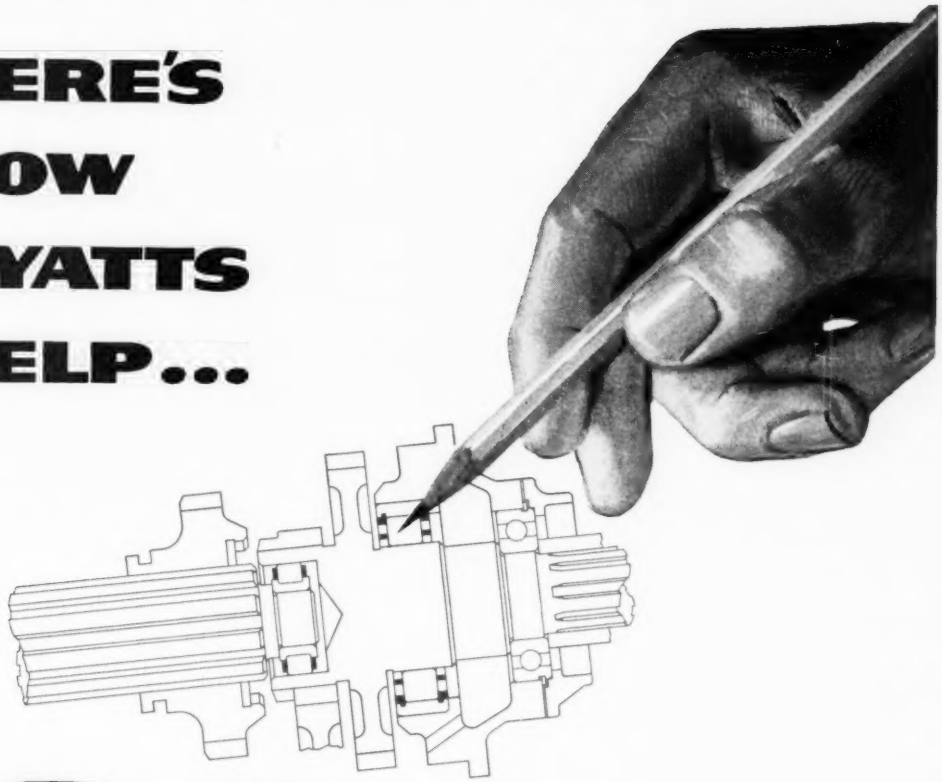
Because parcel-post shipments from Gilbertville Mills have increased so much, the post office in Gilbertville, Mass., has been raised from third to second class and moved into the mill building.

The idea is saving the mill and the post-office staff much work. A chute carries wrapped and stamped parcels from the shipping room to the post office. The postmaster checks the parcels and slides them to the loading door.

A trucking operation was saved, and an elevator was released for other use.

when LIMITED SPACE is a design factor

HERE'S HOW HYATTS HELP...

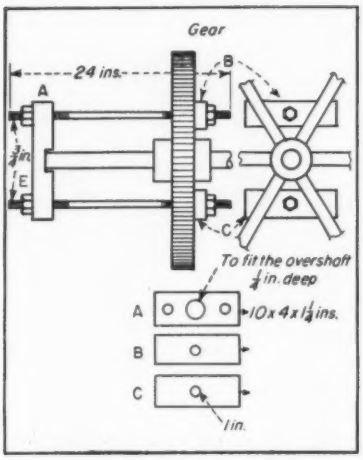


Sometimes a fraction of an inch is the difference between a simple design modification and costly re-tooling. And the engineer who is thoroughly familiar with Hyatt Roller Bearings will know a lot about how to save those fractions. He'll know, for example, that to gain greater shaft rigidity with the same size housing, he need only check his Hyatt catalog for a separable inner race type of bearing. This type—available in a wide range of sizes—may be applied with the rollers operating directly upon the surface of a suitably hardened and ground shaft. Thus, a larger-diameter shaft may be used without sacrificing bearing capacity, or a larger-size bearing may be used without changing the size of the shaft. For a copy of Hyatt's latest catalog, No. 150, write to Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER

Homemade Puller Removes Camshaft Gears From Looms



CAMSHAFT GEARS are easily removed by turning the nuts with an open-end wrench. Plates B and C fit inside the spokes of the gear, Plate A is positioned on the end of the camshaft, and rods D and E join the three plates together.

In our work, it's often necessary to remove the gear from the camshafts on our looms. We used to drive the gears off with a drift and heavy hammer, but it's hard to get inside a loom with a warp in it. Besides, we used to break a lot of gears hammering on them.

We now use a gear puller we made ourselves to make the job quick and easy.

First, we made three plates from cold-rolled steel stock 1¼ ins. thick and 4 ins. wide. Each plate is 10 ins. long.

The first plate has a hole drilled ¼ in. deep in the center just large enough to go over the end of the camshaft. A 1-in. hole is drilled 1½ ins. from each end of the plate.

The other two plates have a 1-in. hole drilled in the center of them.

Two ¾-in. steel rods 24 ins. long are threaded on each end for a 9-in. distance.

To remove a camshaft gear, we place the two plates (drilled only in the center) inside the drive-gear spokes opposite each other, insert the rods through them, and slide the remaining plate (the countersunk one) over the rods and onto the end of the camshaft.

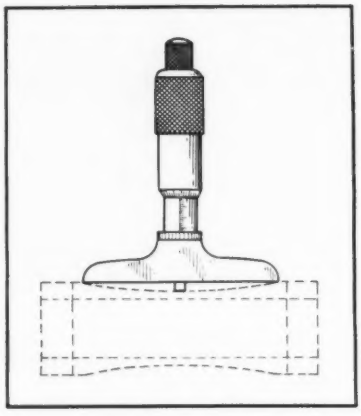
When the rods are placed through the two plates inside the spokes of the gear, nuts are flush with the ends of the rods. Two more nuts are added to the rods after the countersunk plate is positioned.

By simply turning the two outside nuts clockwise with an open-end wrench, we easily remove the drive gear.

This device is easily made, is low in cost, and is capable of tremendous pulling power. *George Lischer, Allentown, Pa.*

[For camshafts that end flush with the gear hub, we recommend using a short length (2 ins. longer than the hub) of cold-rolled steel shafting of ¼-in. smaller diameter than the camshaft. This shaft is used as an extension. One end of the steel is turned to fit into the centering mark on the camshaft. The other end is drilled and tapped for a ¾-in. capscrew, and the countersunk plate is bored to receive the capscrew. EDITOR.]

Measure Top-Roll Wear With a Micrometer Gauge



THIS EXAGGERATED CASE shows how a micrometer gauge is placed on a top roll to measure the amount of hollowing.

You can't measure top-roll wear accurately by just looking at the rolls. If you decide by eye alone, you're bound to take out some rolls before they need rebuffing, and some rolls will stay in place too long.

What's the answer? A standard depth gauge.

Place the wide, flat base of the gauge on the top roll, and have the micrometer blade at the roll center. Turn the adjust screw until the blade makes light contact with the roll.

What's good and what's bad? That you'll have to determine according to your own needs. But once you set up your tolerances you can find out exactly how long rolls can run before reaching the limit. Then you can change or rebuff rolls on schedule and use the gauge only for an occasional check.

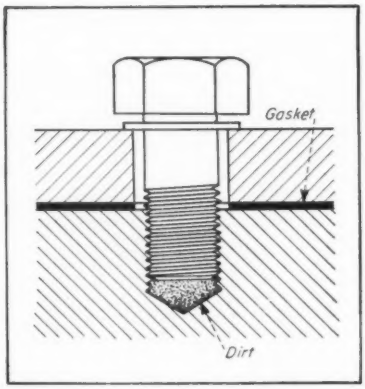
This reliable system of roll maintenance saves money and improves quality.

Check Capscrew Holes When Gaskets Blow Out

If gaskets on compressors, generators, water pumps, and other equipment continue to blow out, the trouble may not be in the machine at all. Dirt underneath the capscrews holding the gasket in place may be causing the trouble.

Recently, the same gasket on one of our machines continued to blow out with no apparent trouble in the machine. Finally, we found a lot of dirt underneath the capscrews holding the gaskets in place. The dirt was holding the capscrews out and keeping the gasket from seating properly.

We cleaned out the dirt, replaced the gasket, tightened the capscrews securely, and have had no further trouble. *W. F. Schaphorst, Newark, N. J.*



DIRT UNDER THE CAPSCREW is holding the capscrew up and keeping the gasket from seating properly. The result is blown gaskets.

Rubber Cap Prevents Yarn Snagging on Cone

Nickel tops of cones gave us endless trouble when we knitted rayon yarns. The damaged cones would catch the yarn, break the filaments, and cause the stop motion to operate unnecessarily.

We cut the fingertips off rubber gloves and stretched these caps over the tops of the cones we found damaged. Yarn now unwinds safely from the cone and eliminates rewinding or discarding the cone. *Leonard Mauer, Brooklyn, N. Y.*

The answer to most of your questions about stainless steels are right at your finger tips, when you use Crucible's unique new Stainless Steel Selector.

Want to know the machinability characteristics of a stainless grade? Resistance to corrosion or scaling? Physical or mechanical properties? You can get the answers to these and other questions simply by setting the arrow on the Selector slide at the proper window. It's just as quick and easy as that.

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Start with the problem. For example, resistance to corrosion in contact with copper sulfate. Just set the slide at the proper index number shown on the Selector (in this case on the back), and you have the answer in a second – grades 302 and 316 are fully resistant to this form of attack.

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54 years of Fine steelmaking

STAINLESS STEELS

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REX HIGH SPEED • TOOL • REZISTAL STAINLESS • MAX-EL • ALLOY • SPECIAL PURPOSE STEELS

This Dyehouse Uses A Portable Mixing Tank

STAINLESS-STEEL TANK is used for boiling up dye solutions in the drug room to avoid making messes in the dyehouse and to allow uninterrupted dyeings.

Buckets, dippers, and leaky pipes are troubles common to most dyehouses. At Dundee Mills, Mill No. 1, Griffin, Ga., we designed a portable dye-mixing tank to eliminate these problems.

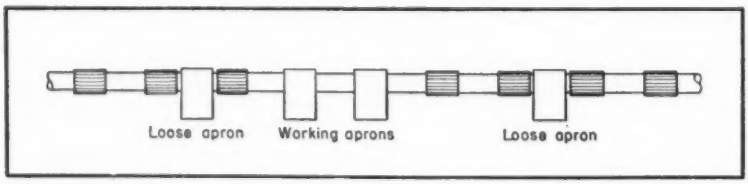
We built a 125-gal. stainless-steel tank on a rubber-castered stainless-steel dolly. A 1-hp. motor drives a pump fixed to the dolly.

Pump feed can be controlled within limits, and the pump discharges through a stainless-steel nozzle that can be put into the dye-machine expansion tank below the surface of the liquor.

Now we can weigh, mix, and boil up dye solutions in the drug room and wheel them to the machines.

Another big advantage of the tank is that dyeings can continue uninterrupted while the next bath is being prepared. This feature is particularly helpful for naphthol and bases.

Extra Spinning Aprons Kept Between Roll Bosses



SPARE SPINNING APRONS are kept on the middle bottom roll of spinning frames and slipped into place when needed to minimize lost production.

Long-draft bottom aprons in the Casablancas system don't all wear out at the same time, and a spindle usually has to be kept idle when an apron needs replacing.

No matter how fast the apron is replaced, some production time is bound to be lost.

We've minimized this loss by keeping extra aprons on the middle bottom roll between working sections. We usually put a couple of extra aprons on every section.

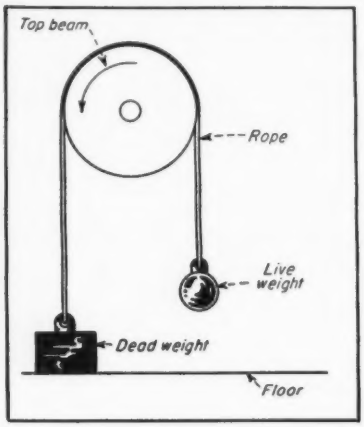
Now, when an apron breaks, the spinner just shifts a spare apron into position and starts up again with very little production loss. *I. Abraham, Warangal, India*

Snap-Action Switch Stops Spinning Frame

A Tennessee mill has installed precision snap-action switches as safety devices on spinning frames.

When the gear box is opened, the switch automatically stops the frame. *Micro Switch, Freeport, Ill.*

Live and Dead Weights Control Top-Beam Tension



TWO WEIGHTS control the tension on top beams. The dead weight rests on the floor, and the live one dangles in the air.

In running top beams (second beams) on delicate yarns to be used in stripes and other decorative fabrics, we have always had a lot of trouble in keeping the proper tension on the yarns. It seems that the tension is always too tight or too loose.

When the tension on the delicate ends is too tight, the filaments (on filament-rayon yarns) break. On cotton or staple-rayon yarns, the ends break excessively.

Our old method of controlling the tension on top beams was to fasten one end of a rope to the loom frame, wind the rope around the beam head, and fasten the other end to a weight left dangling in the air. The arrangement resulted in pulling the warp against a live weight and gave the best results of any method we knew about.

We have recently learned a new way to control top-beam tension. Instead of fastening the first end of the rope to the loom frame, we now fasten it to a weight slightly heavier than the weight used for a live weight. The new weight is placed on the floor.

With two weights used this way, we can control our top-beam tension closely and are weaving better-quality cloth at higher efficiency. *H. J. Armstrong, Yorkshire, England.*

Finish · · Heat-Set Synthetics quickly with TURBO penetration

The Turbo Cabinet . . . adaptable for wet or dry heat . . . under pressure or vacuum . . . used as the basic element in Turbo Textile Machines. Operated with wet heat it will preboard and preset hosiery and sweaters. With dry heat it will finish hosiery, sweaters, yarns and fabrics. Adaptable to a wide range of additional drying and heating processes. Automatic timing and controls take the guesswork out of operation.

For economy in time and labor — for quality results in finishing ask about the Turbo Cabinet incorporated in . . .

Preboarding and Finishing Machines for nylon hosiery . . . the *AD-48* that can do either or both operations . . . machines that help you get more "firsts", with less labor.

Crimp Setting Machines — permanently set the crimp in synthetic fibers and yarns.

Turbo Yarn or Fabric Setting and Processing Machines — adaptable for skein, spool or cone processing. Available for steam pressures up to 45 pounds per square inch and vacuum exhaustion, for deeper penetration.

All Turbo Machines can be adapted to your particular requirements, or special machinery can be built for specific problems. Tell us what you want — we'll be glad to help.

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SINCE 1929

TURBO MACHINE COMPANY, LANSDALE, PA., U. S. A.

Southern Representative: F. W. Warrington Co., Charlotte, N. C.

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For Perfect Carding and Even Sliver

When the Doffer and Top Flats are out of adjustment because of worn bearings, uneven, troublesome sliver will come from your card room. Ordinary oil or thin grease is simply unable to stay in bearings constantly to prevent wear and maintain an accurate and close adjustment.

Drip-proof, spatter-proof, leak-proof NON-FLUID OIL lasts 3 to 5 times longer than ordinary liquid oils or grease substitutes. Its highly adhesive quality makes NON - FLUID OIL stay where it belongs—*in* bearings—not *on* card clothing. It is *all* lubricant, and it lubricates *all* the way, until entirely consumed. Heat and wear in bearings—always costly—are avoided when you insist on NON - FLUID OIL.

We are prepared to provide mills with skilled lubrication service. Send for testing sample of on-the-job NON - FLUID OIL plus helpful Bulletin T5-TB.

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NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

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Dear Editor: This card expires April 30, 1954

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. FEBRUARY, 1954

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. FEBRUARY, 1954

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for February are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY AND AUXILIARY EQUIPMENT

A cloth-opening and vacuum-extracting range designed for fabrics that do not pass through a scutcher or cloth opener is described in a leaflet from Birch Brothers, Inc. A ball-bearing turntable eliminates twist. **(F-1)**

A butt-seam gray-room sewing machine is described in a leaflet from Birch Brothers, Inc. It is mounted on casters and fitted with a narrow head. The flat seam allows the cloth to go through calenders and printing machines without stopping or marking off. **(F-2)**

Slitting equipment is described in a bulletin from John Waldron Corp. Various slitting operations and machines are illustrated. Variation in the contour of the cutting-knife edge permits serrated or pinked edges to be obtained. Speeds of 2,000 ft. per min. are obtained **(F-3)**

A paddle-wheel dyeing machine for sweaters, hose, tapes, and garments is described in a folder from Klauder Weldon Giles Machine Co. Heavy-gauge stainless steel is used in these 50- to 250-lb.-capacity machines. **(F-4)**

Better roving regularity is claimed for the Rotafil system described in a bulletin from Thoma Co. The device is fixed to roving frames and gives the roving in the free zone between the front roller nip and the flyer top an ideal twist and increases the breaking strength. **(F-5)**

Webs 84 ins. wide are made on a machine described in a leaflet from Curiator Corp. Continuous webs are made in thicknesses from paper thin to 2 ins. Hourly production of 80 to 430 lbs. on waste and staple fibers is obtained. **(F-6)**

Mechanical counters are described in a catalog from Trumeter Co. Of interest to textile men are these: pick counters, loom-yardage counters, twist counters, switch-over counters, ticket-printer counters, measuring counters, and tally counters. **(F-7)**

A constant-tension winder for cloth is described in a bulletin from Hobbs Mfg. Co. A special electric motor adapts itself automatically to the increasing diameter of the roll of material. The winder can be fitted to polishing calenders, stretcher frames, printing machines, dressing machines, and tenter frames. **(F-8)**

Rolls made from wood, metal, rubber, and plastic are described in a catalog from Rodney Hunt Machine Co. Teflon rolls, solid-wood rolls for wet and dry service, wormed rolls for crease elimination, friction rolls, squeeze and press rolls, and stainless-steel rolls are described. **(F-9)**

A small humidifier is described in a bulletin from Standard Engineering Works. This small portable unit may be filled manually or connected to a water supply. It gives a fine vapor in a horizontal or vertical discharge. It is suitable for small yarn stores and costs $6.75. **(F-10)**

A fiber microtome is described in a brochure from Mico Instrument Co. Preparation of fiber sections as thin as 10 microns can be made. Such cross sections can be used to identify fiber content in mixtures of yarn. **(F-11)**

A uniformity analyzer is described in a brochure from Brush Electronics Co. An illustration of a test where ½-in. lengths of yarn were cut, weighed, and recorded on a graph after the yarn had been run through the instrument shows the accuracy of the instrument in recording irregularities in yarn, sliver, and roving. **(F-12)**

Temperature-control systems are the subject of a bulletin from Barber-Colman Co. Control terminology, recommendations governing the placing and use of sensing elements, and the selection of the proper method of control for process characteristics are given. **(F-13)**

Quill boxes are described in a bulletin from Gladwin Plastics. Constructed of polyester resins in a Fiberglas-reinforced laminate, these quill boxes are made in bright colors and have no yarn-harming projections. There are no seams. They do not rot, and they can be easily nested. **(F-14)**

A pneumatic weighing scale is described in a bulletin from Weighing Components, Inc. Knives, springs, and levers have been eliminated in these scales used for batch weighings, dry-rate feedings, and drum weighings to make for frictionless operation and low maintenance. **(F-15)**

SUPPLIES AND CHEMICALS

Textile wood specialties are described in a folder from Bowman-Dunn Mfg. Co. Among these wood products are skewers,

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Reader Service (Continued)

revolving topclearers, plain and spike aprons, and dye-tube adaptors. **(F-16)**

A starch-gel stabilizer is described in a leaflet from Glyco Products Co. Addition of 0.5% to 2% Flovis during paste manufacture retards the set of the starch gel and allows more freedom from lumps. **(F-17)**

An optical whitening agent for wool, nylon, and acetate is described in a booklet from General Dyestuff Corp. Blancophor FF is highly water soluble and produces blue-violet brilliancy on white yarns and piece goods. **(F-18)**

Wool wet processing is the subject of a booklet from General Dyestuff Corp. The various steps associated with the preparing, dyeing, and finishing of woolen and worsted fabrics are listed with recommended auxiliaries. **(F-19)**

"The Application of Dyes to Textile Fibers at High Temperatures" is the title of a bulletin from American Cyanamid Co. Techniques of high-pressure dyeing of synthetic fibers are given. Cross-section photographs of fibers are shown. **(F-20)**

Mildew-damage prevention by a permanent treatment is discussed in a brochure from F. C. Huyck & Sons. The treatment is intended for felts, is applied during manufacturing, prevents edge cracking, and improves felt operation. **(F-21)**

Polyvinyl-acetate emulsions are the subject of a booklet from Cotton Chemical Co. A raw-material emulsion base for compounding with plasticizers or resins to obtain specific products where the color, strength, and toughness of polyvinyl acetate are desirable is described. **(F-22)**

Solution-dyed rayon-staple samples are shown in this brochure from Courtaulds Inc. Indian Yellow No. 20 and Pink No. 21 are shown along with a 50-50 blend. **(F-23)**

Nontarnishing metallic yarns are described in a booklet from The Metlon Corp. Technical information is included for the consumer, designer, and manufacturer. Colors, widths, and yardage per pound are listed. **(F-24)**

Hydrogen-peroxide storage is discussed in a bulletin from Buffalo Electro-Chemical Co. Procedures for dealing with self-heating hydrogen-peroxide tanks such as addition of stabilizers or water cooling are discussed. Calculations used to predict storage behavior, and charts and graphs are given. **(F-25)**

A vinyl-copolymer for sizing dope-dyed yarns is described in a data sheet from Colloids, Inc. The absence of size sticking to slasher cans reduces the broken filaments and the frequency of cleaning slasher cans. A firm crisp hand that is resistant to dry cleaning is obtained. **(F-26)**

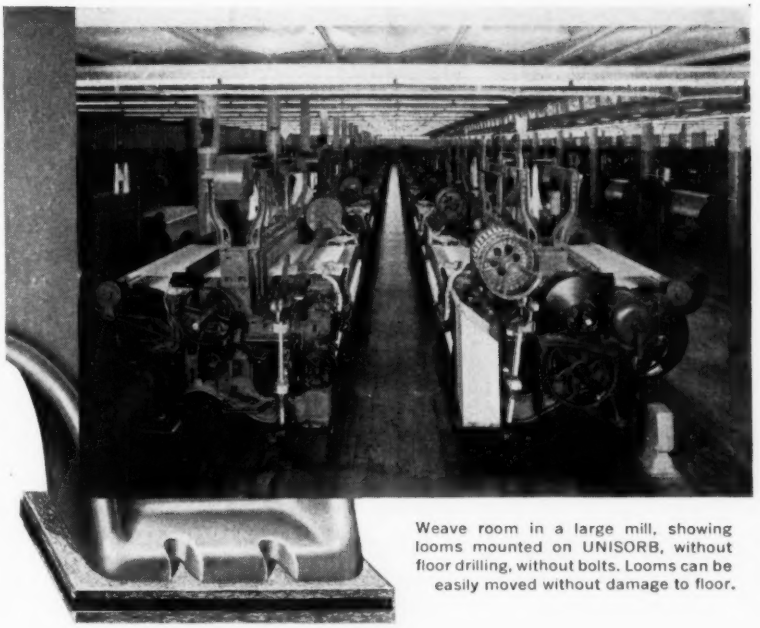
ENGINEERING AND MAINTENANCE

Electronic controls for heating, ventilating, and air conditioning are described in a catalog from Barber-Colman Co. The ultrasensitive micro relay that simplifies the amplifier is described. Dials in the control panel simplify adjustments and operating procedure. **(F-27)**

Drum-handling attachment for fork trucks is described in a leaflet from Lewis-Shepard. The device is a mechanical unit designed to engage, transport, place, and tier any conventional-type drum without the use of pallets or dunnage. **(F-28)**

Variable drives are described in a brochure from Link-Belt Co. The Positive Infinitely Variable drive consists of a self-tooth-forming chain operating between two pairs of conical-toothed wheels. Stepless-speed controls are combined with positive chain-drive features for 20- to 25-hp. requirements. **(F-29)**

Pop-safety and relief valves for steam, air, gas, water, oil, and other liquids are described in a catalog from Lunkenheimer Co. Difference between pop-



Weave room in a large mill, showing looms mounted on UNISORB, without floor drilling, without bolts. Looms can be easily moved without damage to floor.

Another Textile Mill Mounts Looms on

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You can now get these advantages by mounting all kinds of textile machines on UNISORB pads:

- 10% to 20% saving of installation labor
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- reduce vibration 60% to 85%
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For the facts about these advantages, including increased efficiency of machines and workers, return the coupon for your copy of the UNISORB Textile Machinery Booklet. It's free, and you're under no obligation.

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- for permanence of fungicides, fire-proofing, moth-proofing and other finishing agents.
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More is required of modern fabrics than ever before if they are to stand up in competition today. The Atlas Fade-Ometer and Launder-Ometer will give you dependable test results in a minimum of time and at minimum cost.

Write for information on the new Atlas Scorch Tester for testing damage due to chlorine retention.

ATLAS ELECTRIC DEVICES COMPANY

361 West Superior Street, Chicago 10, Illinois

WEATHER-OMETERS • FADE-OMETERS • LAUNDER-OMETERS

Reader Service (Continued)

safety valves and relief valves are shown, rules governing valves are outlined, and installation and operation of valves are described. **(F-30)**

Heat-treated precision pressure plugs that seal tight without sealing compounds are discussed in a bulletin from Standard Pressed Steel Co. A positive seal against liquids and gases under pressure is given. **(F-31)**

Truck casters are described in a catalog from Faultless Caster Corp. Spring-action cushion-ride casters in medium and heavy duty, new drawn-steel wheels, floor-truck locks, and other casters are described. **(F-32)**

Corrosion-resistant fittings for use with light-wall pipe are described in a catalog from Horace T. Potts Co. These fittings feature the tangential section as a new concept in piping that reduces initial costs and simplifies piping installations. **(F-33)**

A fork-truck with 2,000-lb. capacity is described in a brochure from Elwell-Parker Electric Co. The truck is electric powered and designed for handling loads in confined areas at maximum speed. Short wheel base and 360° steering permit maneuvering in narrow aisles, truck trailers, and box cars. **(F-34)**

Ventilation and air-conditioning filters are described in a bulletin from Dollinger Corp. Installation data, selection charts, and performance data are given. Photographs show the units in various stages of assembly, and how they can be vacuum cleaned when in place. **(F-35)**

"Power and Fluids" is the title of a publication from Worthington Corp. Installation, operation, and maintenance of industrial apparatus and applications of interest are covered; and new-product applications, processes, and methods are described. **(F-36)**

Small-capacity controlled-volume pumps are described in a catalog from Milton Roy Co. Data on capacities, pressures, materials of construction, and operating details are given. **(F-37)**

Dockboards are discussed in a fact file from Magnesium Company of America. Facts on bridging gaps between loading docks and rail cars and highway trailers are presented. The cost of makeshift plates is related and compared with dockboards made to specific needs. **(F-38)**

A floor-finish specification chart gives details on 15 floor finishes from Multi-Clean Products. The chart is arranged to indicate the various treatments recommended, or not recommended, for more than a dozen different floors. **(F-39)**

Control valves are described in a bulletin from Conoflow Corp. The upper valve consists of an aluminum cylinder with bored and honed internals, a plastic piston with a graphite-impregnated "O" ring, and an integral positioning device. **(F-40)**

GENERAL

"Inner Structure" techniques for studying fiber performance in many different fabric blends are described in a booklet from Carbide and Carbon Chemicals Co. Text and photos explain what "inner structures" are, how they are made, and their use in fabric-quality studies, fiber-content analysis, and quality control. **(F-41)**

Identification and analysis of Vicara in blends with other fibers is described in a bulletin from Virginia-Carolina Chemical Corp. Identification is considered by specific-gravity separations, microscopic examination, staining techiques, burning tests, and chemical separations. **(F-42)**

"Dyeing of Vicara Blends" is the title of a bulletin from Virginia-Carolina Chemical Corp. Scouring of Vicara blends, and dyeing of Vicara with wool, nylon, cellulose acetate, and Dynel are dealt with. **(F-43)**

"Bakelite Review" is the title of a booklet from Union Carbide and Carbon Corp. Plastics in preview, postforming

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Pittsburgh VAT JADE GREEN BN
Double Paste

Few colors can match the purity and clarity of Pittsburgh-Vat Jade Green. It has the brilliance and sparkle you need to produce shades with built-in sales appeal—thanks to the exceptional chemical purity resulting from Pittsburgh's unique and exacting coal-to-color production control. It is ideal for printing or dyeing cotton, linen or rayon, by conventional or continuous methods.

Like all Pittsburgh Dyestuffs, Pittsburgh-Vat Jade Green is purity-controlled at every step of production—from the company's coal unloading docks to final shipment from our new and modern Fine Chemicals plant. And *you* benefit from the *basic* Pittsburgh advantages of uniform high quality, continuing supplies and prompt dependable shipments. ● Let our Applications Laboratories help you with *your* dyeing problems. Call, wire or write . . . today!

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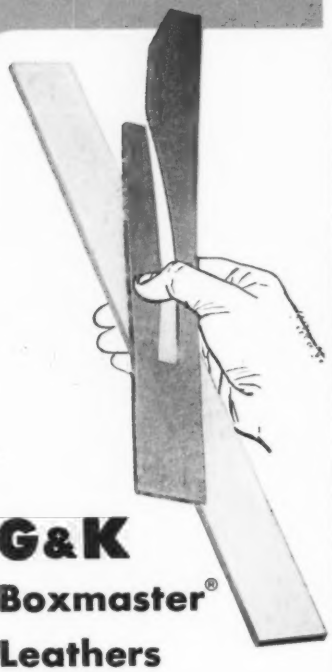

G&K Boxmaster® Leathers save money for you in the long run!

Hit! . . . and slide! That's what the shuttle does as it enters the box at 30 miles an hour! That's why binder and box plate leather must be tough and resilient to withstand the impact, with a deep velvety surface to bring the shuttle to a gentle stop.

Hairitan® Boxmaster Leathers *cut clean*, with smooth catch-free edges. The leathers need no waxes or fillers . . . do not bleed or discolor the filling yarn.

FREE CATALOG: Shows the great Orange Line of Textile Leathers for weaving — also Aprons and Tapes.

GRATON & KNIGHT COMPANY
Worcester, Massachusetts
DIXIE LEATHER CORPORATION
Albany, Georgia

GRATON AND KNIGHT® Orange® Line

Estab. 1851 T-1

TEXTILE LEATHERS

Reader Service (Continued)

progress, and how a collapsible bobbin cuts manufacturing costs are described in this issue. **(F-44)**

Fire insurance is discussed in a brochure from Globe Automatic Sprinkler Co. How fire safety cuts yearly insurance costs is shown graphically. A new spray type of sprinkler with a fusible element of a sound organic chemical is illustrated. **(F-45)**

"Review of ASTM Research" is the title of a pamphlet from ASTM Headquarters. The material, prepared by the ASTM Administrative Committee on Research, summarizes the work of the various technical committees of the Society as of May, 1953. **(F-46)**

"It's only the beginning" is the title of a 10-min. 16-mm. color-sound picture from Scientific Apparatus Makers Assn. The film is ideal for rounding out a technical or civic meeting devoted to industrial research and development. **(F-47)**

Shipping and packaging department items are described in a catalog from Diagraph-Bradley Industries, Inc. Information on stencil-cutting machines, label-gummers, wire-stitching machines, metric conversion tables, export directions, and stitching wire is given. **(F-48)**

Multiple copies of letters, reports, cards, and charts can be made in less than one minute on ordinary paper by the method described in a bulletin from Eastman Kodak. The only equipment required is the Verifax printer, a self-contained unit about the size of a typewriter. **(F-49)**

"The High Cost of Obsolescence" is the name of a pamphlet from American Textile Machinery Assn. Comparative production and cost-figure breakdown shows a sample modernized cotton mill needs 43 employees per shift as against 70 for the unmodernized mill. **(F-50)**

Pointers for Spervisors

CONTINUED FROM PAGE 133

A foreman will, as a natural tendency, give a stronger hand of assistance to those employees of the type he prefers. Others either fall by the wayside or don't succeed as well. So no matter what measure of job success is used, the selection tests will usually be consistent with what the foreman wants in an employee.

This situation becomes a problem when the foreman is replaced by a new foreman who has a different concept of a good employee. The new foreman will find the present work force in the department somewhat unsatisfactory. The established hiring specifications will no longer be fully applicable. The established pattern of interviews and tests may not select the type of employee the new foreman wants.

2. **Training.** The problem here is similar to the selection problem. The new foreman may not be pleased with the end products of the training done by his predecessor. He may insist on a new emphasis (as on job methods or speed or quality). He may want to develop different attitudes and work habits in his employees.

3. **Discipline.** A new foreman, in terms of what he wants from employees, may tighten or let up on disciplin-

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G&K Leather Belting "bear hugs" the pulleys for more production-power

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ary measures. If he emphasizes reliability more heavily than his predecessor, he will take stronger action against absenteeism, for example. This same difference in emphasis also leads to inconsistent disciplinary actions between departments.

4. Transfer. Problems on transfers result simply from shifting a man from one department where he was considered a good hand to another department where the foreman has a different definition of "good hand." The same difficulty occurs when good hands laid off from one department or mill are rehired in another.

In summary, supervisory differences of opinion concerning the concept of "good employee" lead to personnel difficulties. Some of these differences are justified; others are not. Foremen —individually and in group conferences—might profitably discuss this topic: "Considering the aims of my company, mill, and department, am I really selecting and developing the right kind of employee?"

Flame-Resistant Treatment

CONTINUED FROM PAGE 101

ethanolamine retards polymerization, while 4% will stabilize solutions for several hours. THPC-trimethylolmelamine solutions are reasonably stable at pH 7, but the rate of polymerization increases as the pH falls to about 5 or 6. Amounts of triethanolamine somewhat greater than suggested do not affect the quality of the flameproofed goods.

Processing

Fabric can be processed on a continuous basis, or it can be processed stepwise. In either case, it is padded in the resin-forming solution, dried, cured, washed, softened, and dried.

In general, fabric will receive a more-uniform application if it is padded through the resin-forming solution twice, with a very tight squeeze-roll setting used each time. To prevent solution migration and stiffening of the treated goods, only moderate tension should be applied to the fabric as it comes from the padder and the fabric should be dried as soon as possible at a temperature of about 185° F. Drying temperatures above 220° F. causes surface curing before the inside of the yarn is dry. The length of time fabric is dried is not critical except that it must be dry before resin curing begins.

It is necessary that the THPC-resin be cured at an elevated temperature to fix it in the fiber. The temperature of the cure is dependent upon

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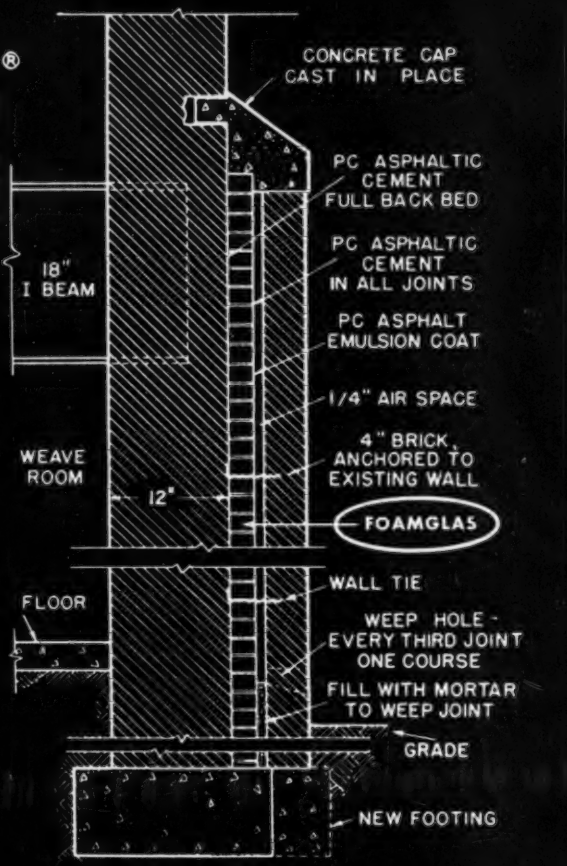
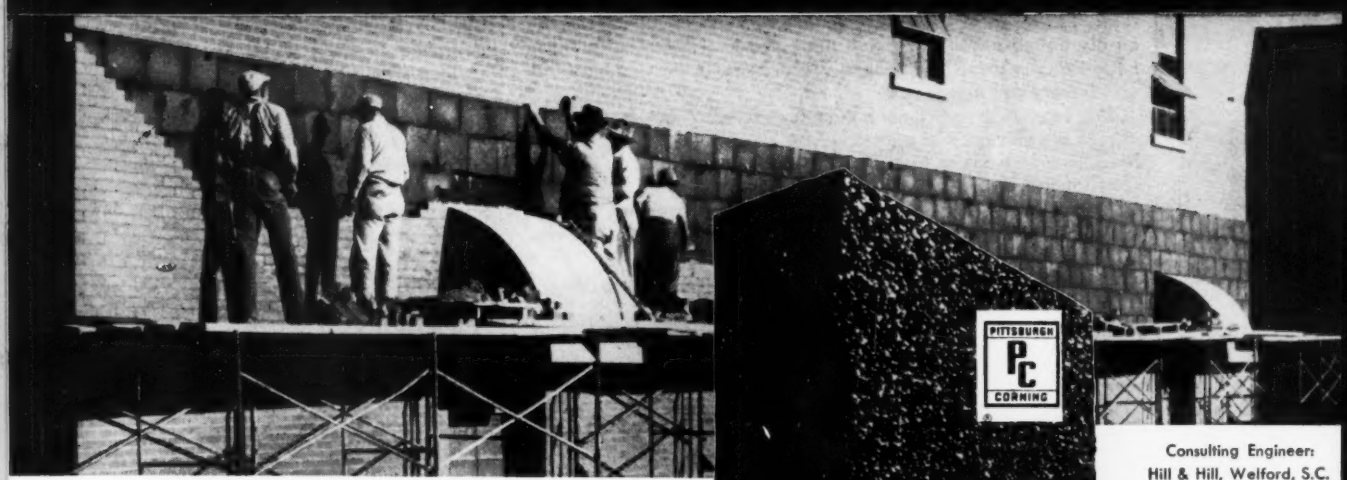


WALL SECTION



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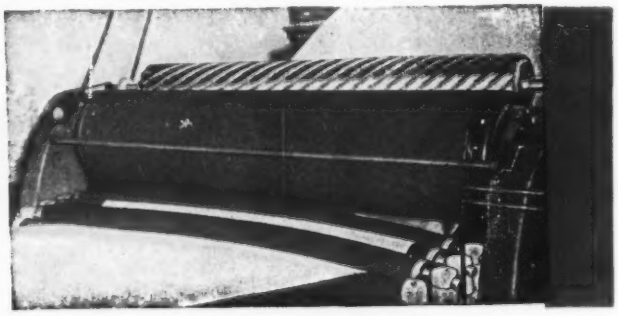

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time of cure. A short cure requires a high temperature, and vice versa.

Curing conditions will vary for different materials. Eight-ounce twill is adequately cured in about 4.5 mins. at 285° F. Less time at the same temperature will reduce the efficiency of the resin-forming solution, but little or no harm is done if the fabric is cured twice as long. The effects of prolonged cure at temperatures above 285° F. are not yet known.

The curing oven should be well vented. The possible toxicity of the fumes evolved during curing has not been investigated.

Excess salts can be washed from the cured goods by almost any technique, since they are water soluble, and a softener can be applied during the last rinse. Although the resin treatment does not lower the breaking strength, it generally reduces the tear strength; but if a softener (like Triton X-400) is applied after the resin treatment, the tear strength is usually equal to that of the untreated fabric; and this relationship is maintained through many launderings.

The THPC treatment is compatible with water-repellent treatments. Some of these treatments act as softeners and improve the hand and tear strength. They may be applied after the flameproofing treatment; or, in some cases, they may be incorporated in the flameproofing solution and applied in one padding-and-curing operation.

The amount or degree of flameproofing is dependent upon the amount of resin put into the fabrics and upon fabric construction. Only about 10% resin is required to flameproof 32-oz. duck belting so that it will pass the standard vertical test (Fed. Spec. CCC-T-19 1b), whereas about 16% is required for 8-oz. twill and about 32% for 2-oz. marquisette.

The minimum amount of resin that will flameproof a particular piece of goods can be established by a few preliminary experiments. The amount of resin introduced into a piece of material can be varied by varying the concentration of the reagents in the resin-forming solution.

Here's a Typical Application Procedure

The process is illustrated by the following description of a typical laboratory-scale application to 8-oz. cotton twill.

Preparation of solution

1. 1,868 grams of crystalline THPC (purity 95%) were dissolved in 1,800 g. of water and then 338 g. of triethanolamine were added.

2. 1,069 g. of trimethylolmelamine (unmethylated) and 1,114 g. of urea

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Dacron*
Scour Dacron with 0.25% ENERGETIC-S and 0.25% ammonia, basis weight of solution, for 15 minutes at 160°F.
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Orlon*
Wet out by padding in a cold solution (0.4% ENERGETIC-S, 2.0% Varsol**, 97.6% water). Allow to stand and then boil-off in soap and soda ash. Treat the fabric with 0.25% sodium chlorite, 0.25% oxalic acid, and 0.25% ENERGETIC-S based on the weight of the solution for about 1 hour at 200°F.
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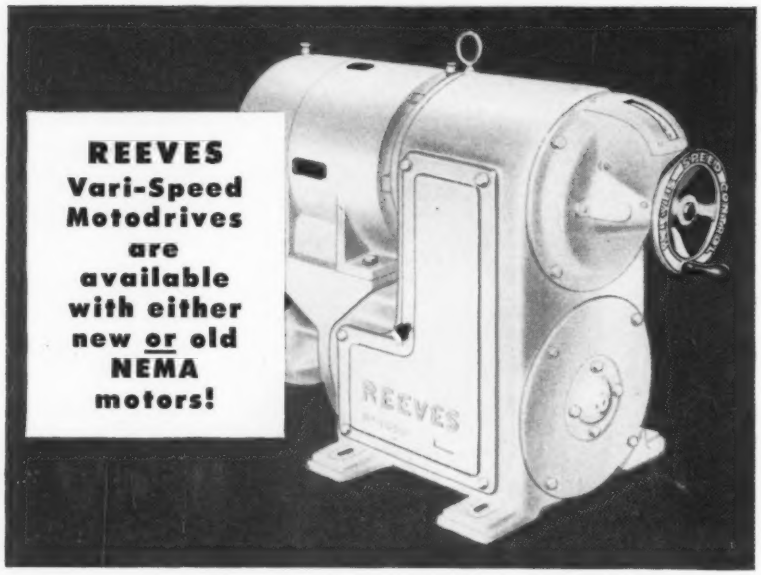

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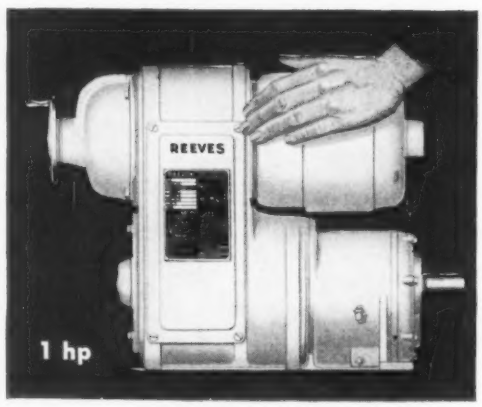

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were dissolved in 5,062 g. of water. In this particular experiment, the trimethylolmelamine was the trade product Resloom HP.

Both solutions should be made at room temperature, and heat should not be applied to the solutions before they are padded on the fabric.

Padding

Solutions 1 and 2 were mixed, and 100 yds. of 18-in.-wide 8-oz. O.D. twill was padded through two dips and two nips with a tight squeeze-roll setting. The wet pickup was 71.5%.

Drying

The fabric was dried 4.5 mins. by passing it through a forced-draft oven at 185° F.

Curing

The fabric was cured 4.5 mins. by passing it through a forced-draft oven at 285° F.

Washing and Drying

The fabric was washed in a winch, first in cold water and then in hot water containing 0.1% Duponol LS (flakes). It was then rinsed in water and dried by a passage through the oven.

Softening

The dried fabric was softened by padding with a 4% solution of a cationic softener to a 50% pickup. In this particular experiment, the cationic softener Triton X-400 was used.

It is suggested that mill trials be preceded by laboratory experimentation on the particular fabric to be flameproofed. In general, the curing conditions used for the creaseproofing resins should be satisfactory.

Properties of the Flameproofed Fabrics

Fabrics flameproofed as outlined passed the standard vertical test after 15 launderings with Igepon T followed by a laundry scour, in accordance with Federal Specification CCC-T-19 1b. Little or no loss of resin, based on phosphorus and nitrogen analyses, was observed during such washes.

However, some applications of the above formulation show about 15% loss of resin on boiling in soap and soda solutions for 3 hrs. Permanence of the flameproofing to such treatments may be obtained by greater original resin add-on or by decreasing the amount of urea in the treating solution. Use of 7.5% urea instead of the 9.9% given in the typical formulation is suggested.

Resin pickup as low as 13% imparts sufficient flame resistance to 8-oz. twill so that it will pass the standard vertical flame test, but about 16% resin is recommended to give greater flame resistance. This 16% pickup is considerably less than is required with most permanent-type flameproofing agents, some of which

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Solids	55%
pH	4-5
Particle Size	Mostly under one micron
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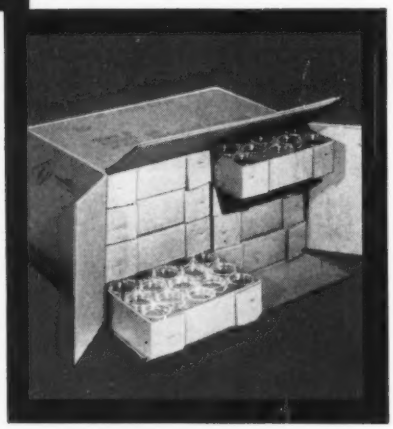

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require up to 50% pickup to provide adequate flame resistance.

A very important property of materials flameproofed with THPC resins is that the goods are also glowproof. The glow that usually persists after the flame of burning cotton is extinguished often completely consumes the fabric. The afterglow of THPC-resin-treated 8-oz. twill lasts less than two seconds.

Many resin treatments, especially the urea-formaldehyde resins, reduce both the tear and breaking strength of cotton fabrics by about 35% when about 15% of the resins is put on the goods.

The THPC resins have very little effect upon the breaking strength but, in general, reduce the tear strength somewhat. The loss in tear strength depends on the kind of fabric. A very tightly woven fabric is apt to lose more tear strength than a loosely constructed material.

The application of a softener to THPC-resin-treated fabric brings back the tear strength of almost any fabric to about equal that of the untreated goods. In some cases, the tear strength of THPC-resin-treated goods, treated also with a softener, has been even greater than that of the untreated fabric.

Fabrics flameproofed with THPC resins show improved crease resistance, often as much as 30%. There is also some evidence that the treatment imparts considerable resistance to shrinkage.

For uses such as tentage materials and awnings, goods flameproofed by previous methods are often treated with a mildew- or rot-proofing agent to protect them from microorganisms.

Such an aftertreatment may not be necessary for goods flameproofed with THPC resins because the resin itself protects the material. Some THPC-treated 8-oz. fabric has been exposed to rain and sunshine for three months in a warm, humid climate without any visible mildew formation. In this same experiment, untreated fabric contained a considerable amount of mildew after three months.

The soil burial test has been used as an accelerated method of determining the resistance to microorganisms of fabrics treated with THPC resins. Samples have retained 85% breaking strength after 112 days in the soil, whereas untreated 8-oz. twill retained only 3% strength after 10 days.

The use of trade names in this paper is not to be construed to be a recommendation by the U. S. Department of Agriculture over equivalent products. Equivalent products may be used if suitable modifications in amounts and processing conditions are made.

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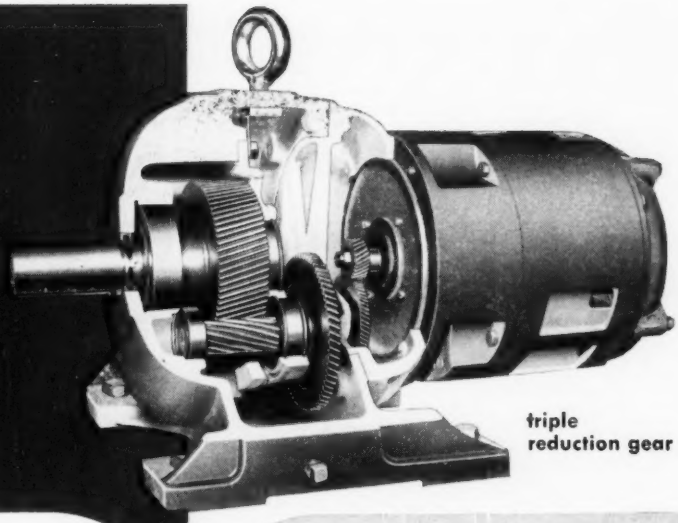

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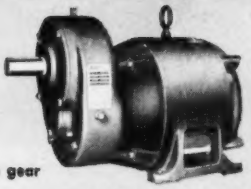

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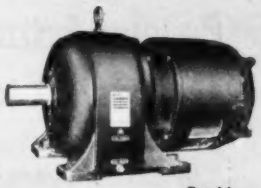

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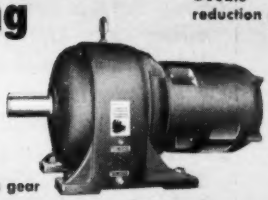

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Exploring the Community

CONTINUED FROM PAGE 135

machinery-replacement planning to restore an old, broken-down mill. But it takes human engineering to do a reclamation job on an entire community. Here are some of the things included in that phase of the Boys' program.

The first thing Robert W. Boys inaugurated was the annual Fourth of July Field Day for all the mill village. This event still includes a program beginning with a flag-raising and ending with all sorts of races and contests for children and adults. At one flag-raising following World War II a beautiful granite memorial was unveiled—a tribute to mill employees who had been in the Armed Services.

When Christmas came along that first year, a big Christmas party was held. Even today the annual affair is one of the year's most popular diversions. A huge and beautifully decorated tree and a Santa who distributes boxes of goodies and toys to all the children make it a real old-fashioned Christmas. The addition of a program of Christmas music, and a play in which the children are the performers complete the party.

Another project started by Robert W. Boys some 10 years ago is the summer day camp, which is of benefit both to the working mothers of the village and to the youngsters who share in the fun. At summer day camp the young people get instruction in craftsmanship, swimming, and lifesaving and participate in all sorts of organized play and sports. The camp is free to all families employed by the mill.

Girl Scout and Boy Scout programs are active the year round.

Three years ago a Parent-Teacher Association was founded under the active direction of Mrs. George Boys. This very active PTA has created a new and deeper interest in community progress. Cake sales, a Halloween carnival, suppers, dramatic projects, and other money-raising activities in which local people participate provide means for financing many PTA projects. During the past few years, Green River's PTA has furnished equipment for the school lunch room, the children's playground, and books for the library. Because of these activities, the local school is rapidly becoming one of the finest in the state.

Even more closely allied with mill personnel is the company's Overseers' Club, to which the heads of all mill departments belong. Dinner meetings are held several times a year. During

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Fig. 2651-A Gate

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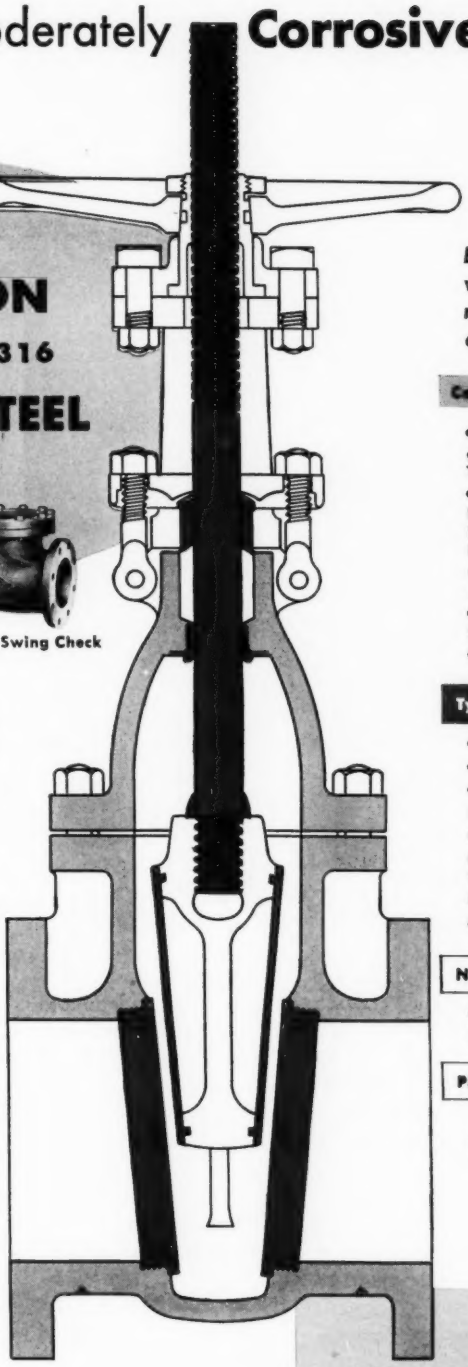
Valves with Type 316

STAINLESS STEEL

Trim

Fig. 2624 Swing Check



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- **BONNET** Rugged construction, like body. Swing-type gland bolts. Screwed-in back-seating bushing. Deep stuffing box.
- **YOKE** Integral with bonnet in 2″ to 4″ sizes.
- **WEDGE** In 10″ to 24″ sizes, with Stainless Steel Wedge Rings.
- **COVER** In Check Valve.

Type 316 STAINLESS STEEL

- SPINDLE
- GLAND
- BONNET BUSHING
- SPINDLE RING
- WEDGE PIN
- WEDGE RINGS Rolled into Nickel Iron Wedge in 10″ to 24″ sizes.
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NI-RESIST Type No. 2

- WEDGE of I-beam structure is solid NI-RESIST in 2″ to 8″ sizes.

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14″ to 24″—150 lbs. O.W.G.

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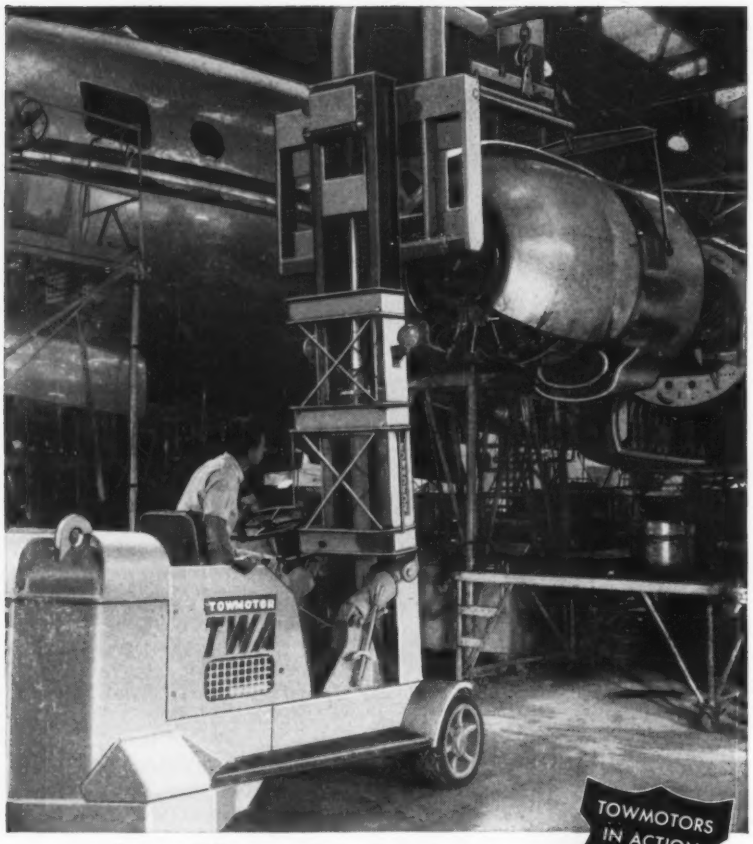

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the discussion period general mill problems make up the agenda. Frequently outstanding speakers address the group on subjects of national importance.

Recently the Tuxedo Ruritan Club was formed. This organization sponsors in rural areas the same type of club work that the Civitans or other civic clubs do in cities. Both men who are employed in the mill and those who work elsewhere but live nearby are members of the village's newest club.

Clubs in Tuxedo are not confined to adults. Three clubs for youngsters from 10 to 18 have been organized by one of the women employed by Green River. The young people love the idea and when it's time for a meeting, where they have games and sports or weenie roasts, as many as 50 or 60 teen-agers will be on hand.

These varied activities covering all age groups in the Tuxedo area form the backbone of a solid community relationship. No longer is Tuxedo on the outskirts of life. No area is a better example of peaceful progress and regained self-respect through the consistent practice of better-type community relations than Green River Mills and the village of Tuxedo.

F.-F. Spare-Parts System

CONTINUED FROM PAGE 125

of each square. The board is nailed to a 2x4-in. frame and fixed to the wall. A hook made from ⅛-in. wire slipped in a hole provided a convenient support for the heaviest of tools.

If the head fixer or foreman finds that the stock of the part he requires is low, he ties a ticket with the index number to the worn or broken part that is placed in the box outside the cage. The stock clerk checks the box three times daily and replaces low spare-part items from the main stock. Twice weekly he checks the knitting-room spare parts and replenishes all low-stocked items.

The broken parts that can be repaired or worn parts that can be rebuilt are welded in the machine shop and returned to the main stock.

Illuminated Chart Helps Identification

The main stock room contains supplies for the whole mill. The stock clerk checks all incoming needles and spare machinery parts. He finds the index number by comparing the part with a replica of the sheets used on

the wall board in the knitting room.

Because the stock room has no windows, a lighted frame was made for this chart. The 10x8-in. prints for this chart were made on translucent projection paper and fixed to a glass frame. The glass frame became the front of a long box hung at eye level opposite the stock racks. Two rows of fluorescent tubes were put inside the box, and the inside of the box was painted white.

The stock bins are constructed in an inclined position to allow the stock clerk full view of the stock. The original of each part is painted red and kept in a small box in each bin. The stock clerk checks all incoming parts with the original.

A wooden box containing change parts for each machine is kept in the main stock room. The boxes are kept in racks and labeled with the machine number and type. The parts for a particular style can be changed very rapidly because these parts have been kept separate and can be fitted to the same machine they were on before.

As needles are received by the stock clerk, he divides them up into packages of 25; so the fixer does not have too many needles on hand. A few boxes of each type of needle are kept in the knitting-control room.

Chart Records Needle Breakage

Each time one or more packages of needles are requested from the knitting-control room, an entry is made on a wall chart. Fixers' names are listed in the left column and the needle type in the remaining columns.

Numbers from 25 to 400 in series of 25s are printed opposite the fixer's name under the needle type. As the fixer requests a package of needles, one number is circled so that a rapid check can be made of needle stock, what needle types are used most, and what fixers are using most needles.

A wall chart on the bulletin board keeps fixers informed of their weekly production and needle breakage. The totals for the previous week and the previous year are shown on the chart.

The charts have shown a gradual increase in needle breakage over the last few years. This increase has been put down to the use of nylon yarns and the introduction of rubber tops.

The old needles are returned to the knitting-control room and spot checked occasionally. The needle chart is also spot checked occasionally. This job is done in a few seconds and guarantees against mistakes in handling needles.

Labor turnover is low at Chipman La Crosse Hosiery Mills, but any

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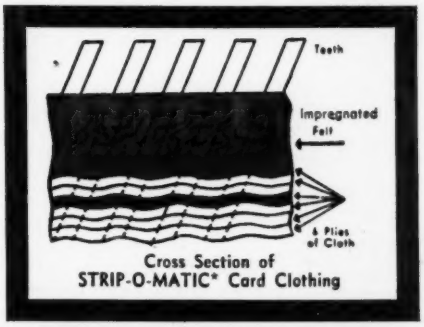
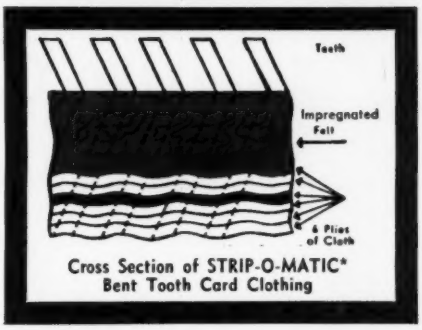


Cross Section of STRIP-O-MATIC* Card Clothing



Cross Section of STRIP-O-MATIC* Bent Tooth Card Clothing

If you wouldn't you're the first. The reply that we always get is, "Sure, but how?" The answer is simple and it's proven. Equip your cards with STRIP-O-MATIC Card Clothing and not only reduce your costs of stripping, of stock loss due to waste, but also improve your yarn quality.

It's happening in mill after mill on all types of fibers.

It's not a question of thousands of dollars for new equipment or additional plant capacity. It's simply a question of putting on STRIP-O-MATIC Card Clothing and really using it correctly to get good results. We know it can be done, because dozens and dozens of mills are doing it.

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newcomer to the plant can learn the system in a short time. Spare parts and needles are kept at a workable minimum, and fixers can concentrate on keeping machines in order.

Wool and Cotton Carpets

CONTINUED FROM PAGE 129

any other loom at the plant in Artloom's program to alter looms to make better rugs.

However, the loomfixers have designed an electrified copper bar that stops the looms when the warps become too slack or too tight.

The 12-ft. axminster looms run at 41 ppm.

Lansdowne Looms Make 12- to 15-ft. Carpeting

Artloom also has a large number of looms manufactured by Lansdowne Steel & Iron Co. The wire loom (it's called that at Artloom because a flat steel wire is inserted into the open warp shed, beaten into the cloth, and then pulled out of the cloth to form the pile) is driven by a Morse positive drive connected to a 5-hp. motor. Timing of the wires is a critical adjustment.

These looms are 12 to 15 ft. wide; most of them are 15-ft. looms. The speed on the 15-ft. looms is 34 ppm.

One warp beam is used for the binder, and another is used to supply the stuffer. Pile-fabric ends come from creels mounted behind the warp beams. The ends are tensioned with weights.

The binder and stuffer harnesses are driven by cams, and the pile-fabric ends are controlled by jacquards.

Artloom inventive touches on the Lansdowne looms include a bell-and-counter arrangement that notifies the weaver on a loom exactly where a broken warp end is located and also records the number of breaks.

The Shaft Loom Is Artloom's Own Baby

Another loom at Artloom, a "shaft" loom, has been altered more than other looms to make the carpeting desired. Originally 9-ft. velvet looms, the width has been increased to 12 ft. by mill engineers and mechanics.

All shuttles on all looms at the plant are hand threaded by the weavers. A small hand press is mounted on one end of most looms to press the cops of filling into the shuttles. Each weaver on wide looms tends one loom.

All looms are set so that the change from wool to cotton means only a change in harness-cam setting, warp for the binder, and creeled ends.

After carpeting is woven, it is run

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The eight "LATYL"* colors developed by Du Pont especially for "DACRON" polyester fiber are compatible with one another and with other disperse dyes in compound shades. They enable you to produce an unlimited range of colors.

The "LATYL" colors have a remarkable degree of resistance to light fading, atmospheric gas-fume fading and excellent fastness to washing. These dyes are suitable for dyeing materials made entirely of "DACRON" and for blends containing "DACRON" and other fibers. In addition, the "LATYL" colors are suitable for pale shades on acetate where they also show exceptional fastness to light and atmospheric fading.

The Du Pont "LATYL" colors, as well as the conventional disperse dyes, can be applied to "DACRON" by the use of carriers, high-temperature dyeing without carriers, or by the Thermosol method. Du Pont's technical staff will be glad to help you in the choice and application of these new dyes . . . or on any coloring problem. Write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

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"LATYL" Violet BN • "LATYL" Violet 2R
"LATYL" Brilliant Blue 2G • "LATYL" Blue FL
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through a tiger machine and then perched and burled.

One Tufting Machine Operates At 550 Rows per Minute

A 12-ft. tufting machine has been added to the plant to make cotton rugs of the twist-loop type at a speed of 550 rows of loops per minute.

Highly twisted cotton yarns are fed to the needles in the tufting head from creels at the back of the machine. Cones of yarn are creeled in pairs to keep the machine running constantly.

The tufts are inserted in a woven jute backing material purchased already woven outside the plant. The tufted rugs are the only rugs, wool or cotton, that aren't woven with a stuffer and backer commonly used to weave wilton carpeting. (Axminsters have no stuffer, of course.)

All carpeting is completely finished at the plant and shipped from there to company warehouses for distribution. [For the story on Artloom's finishing operations, see TW, Sept., '53, p. 152.]

Mill Processes

CONTINUED FROM PAGE 90

manual cleaning, and the new units do a good job.

SPINNING. Both of the major large-package cotton frames are being used more and more. Good results are reported from mills that have run them in full production for a long time.

Filling spinning seems to be on the way out for coarse numbers and may be also for medium numbers. High-speed winding with automatic knotting and automatic high-speed quilling will help the spinning change-over to all-warp frames.

Automatic traveling cleaners—especially the newer types—are a must for all but the finest numbers and most exacting quality of work.

Air-suction end removal is now generally accepted on all types of new frames. The trend is toward central-station units for maximum efficiency.

High drafts continue to be the trend. Mills with high-draft change-overs, ball-bearing spindles, and other improvements are getting results on old frames that rival those on new models. One mill is making 100s cotton yarn for fine sewing thread from single roving with a draft of 40.

Worsted spinners are going to take a second look at pot spinning. Many new features have been added to the U. S. model, and the advantages of pot spinning have been retained while cost has been reduced and operation

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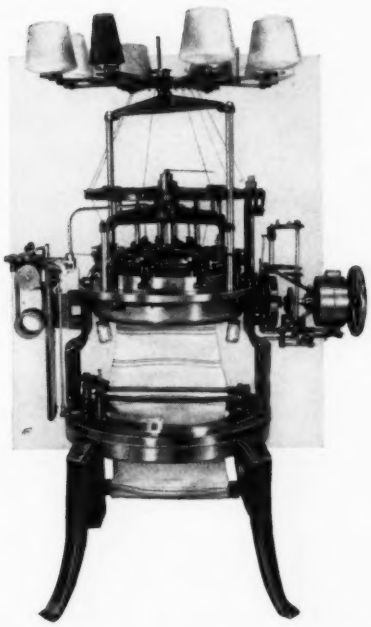

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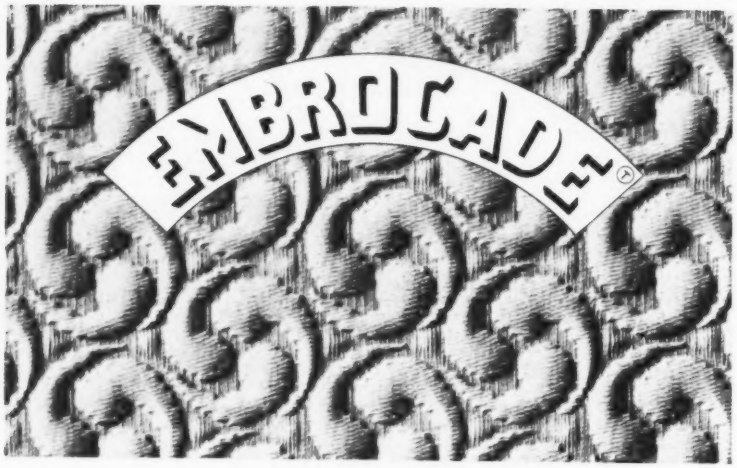

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simplified. The individual pot motor has been eliminated by a new drive, and a new method of winding is being used. A company has been formed to make and license manufacture of the frame.

In general, the trend to long draft in spinning continues. Spinners are constantly on the lookout for auxiliary equipment that will reduce end breakage.

The emphasis is on quality and versatility instead of speed, as spinners are getting into a wider range of fibers.

TWISTING AND WINDING. The large-package spinning frames have presented problems to winder manufacturers, but new models show that the problems are being solved. High speeds and automatic attachments are the theme. The radial quiller is creating wide interest. Two-for-one twisting is still hot, and more patented developments will be announced soon. More-efficient slub catchers with accurate settings are making maximum cleaning possible without chafing the yarn.

WARPING. The trend in warper design is to larger beams, and warpers and creels must be altered for the new large packages.

Warping tension has received much-needed attention, and both the magnetic brake and the mercury stop motion look promising.

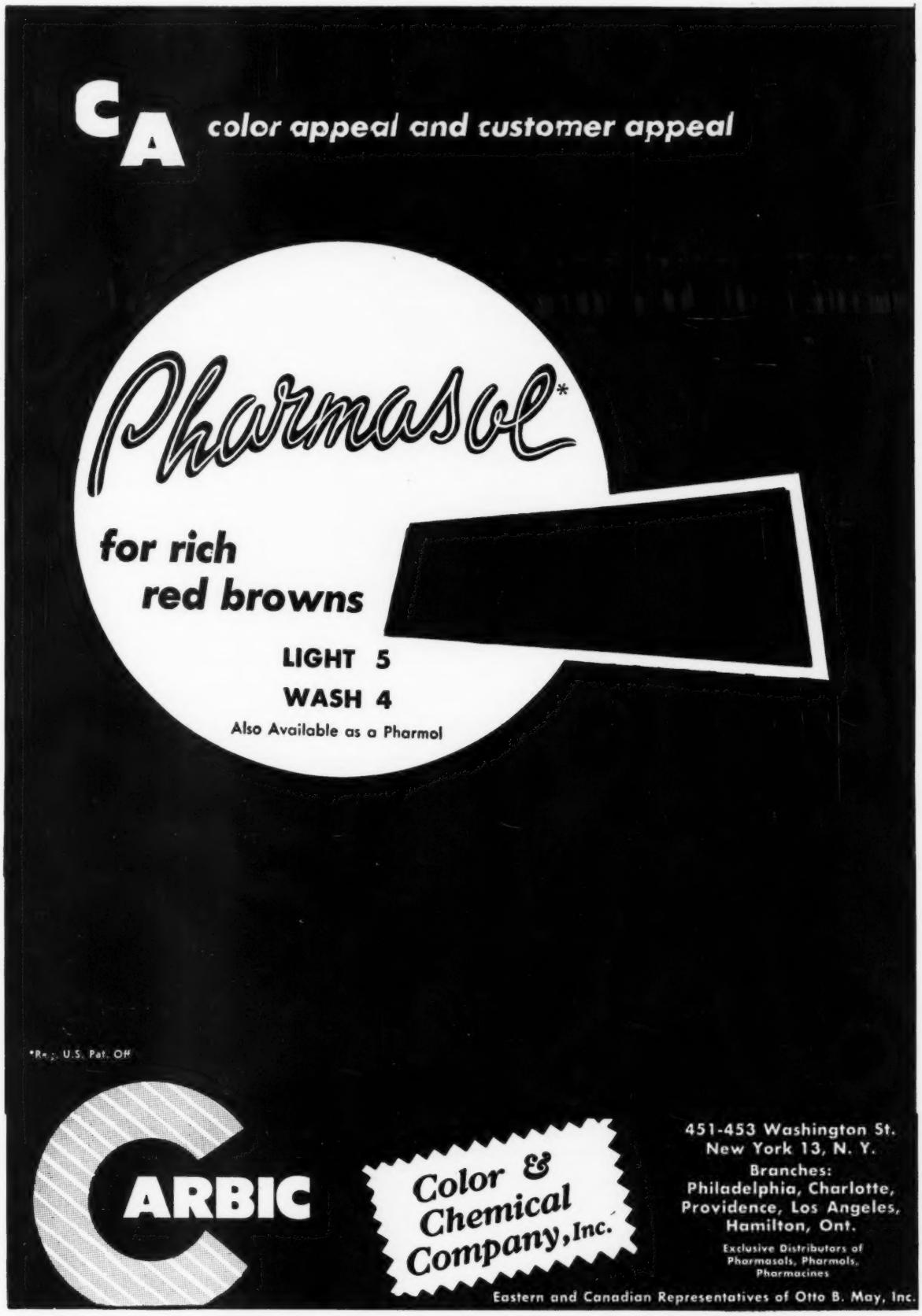
SLASHING. Mills continued to give attention to slashing, although they did not buy new equipment so heavily. Two things stand out in slashing developments: (1) mills are interested in higher speeds, and (2) they are interested in better-quality warps.

As a result, better methods of operation were developed; and in almost all mills instrument controls were added if slashers weren't already equipped with them.

Mills adding new slashers are running them satisfactorily at higher speeds than they were designed to run. At one mill, a new slasher is being run at 100 yds. per min. on fine yarn numbers and does the work that usually takes two slashers to do.

Another mill threw out three old slashers and replaced them with only one new slasher. The new one is operated fewer hours per week than the old ones. In addition, weave-room production was raised 2% as a result of better-slashed warps.

To get comparative figures on the performance of hot-air slashers vs. multicylinder slashers, one mill put in a new one of each type. The conclusion was that results are better from running the hot-air slasher on coarse yarn numbers at high speeds and run-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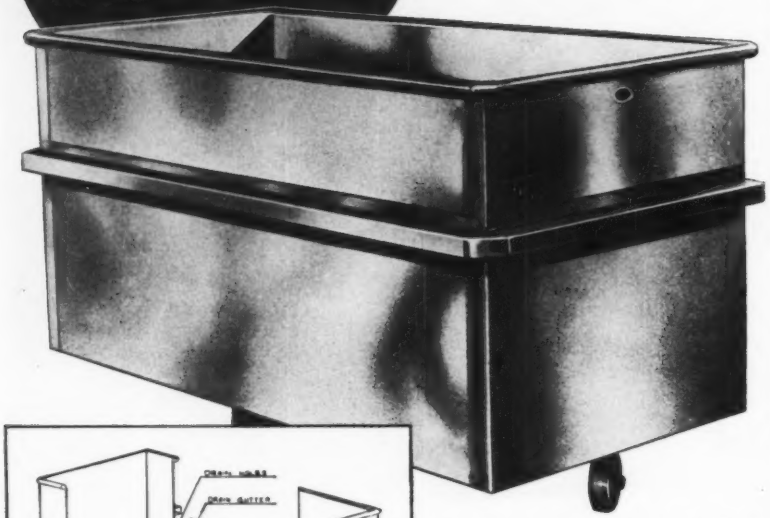

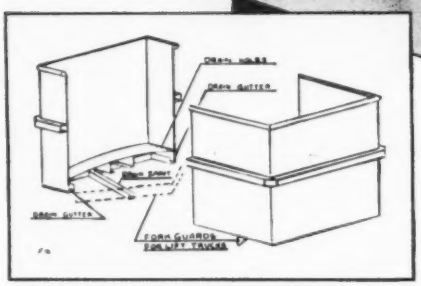

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Gutters at sides lead liquids to drainage ducts at either end and discharge toward bottom center of the truck.

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ning the conventional slasher on fine yarn numbers at medium speeds.

Interest is still high in homogenization, and more mills are installing homogenizers. There is no record of mills having discarded the idea of homogenization, but in at least one instance the operation of one machine has been discontinued.

Paralleling the use of homogenizers to save starch costs is the development of new starch-handling systems with complete automatic controls for mixing and cooking sizing. As a result of using these systems, bags of bulk starch of uneven weight can be used for slight savings.

Another type of starch-handling system has been designed to use pellet-type starch, and substantial savings in starch costs result.

Mill Production

CONTINUED FROM PAGE 84

a year before. Not until October did any cut in activity appear; that month cotton consumption per working day fell 5% below October, 1952. The closing months of the year were marked by further sizeable curtailment.

Mill-order backlogs at the close of 1953 were an estimated 20% below a year ago, while stocks were about double the size at the beginning of the year. Cloth prices were depressed. The price of cotton was comparatively low and stable, and it seems likely to remain so during 1954.

Mill margins were 10% below a year ago near the end of 1953 and may drop close to the 1952 lows before the first half of 1954 is out.

Operations averaged 115 hrs. per week per spindle in place in the eleven months following Korea. They fell to 98 hrs. in the last half of 1951 and the first half of 1952 and averaged 109 hrs. in the last part of 1952 and throughout the first 10 months of 1953. A drop to a low point of 90 to 95 hrs. a week in the second quarter of 1954, followed by a resumption to 105 to 110 hrs. a week sometime in the latter half of the year, seems most likely at this time.

If production levels are lowered as scheduled and purchasing remains conservative, stocks in the hands of converters, finishers, and cutters should be restored to a modest level sometime in the summer, to set the stage for a brisk turn in business.

One sustaining factor will not be present in 1954. Government procurement of cotton textiles amounted to 6% of industry production in 1951 and 1952 and somewhat less in 1953. It will be reduced still more this year. Based on anticipated need, the stockpile of most cotton textiles is large.

Improved finishes such as crease resistance, valley printing on deep embossed fabrics, increased fastness and popularity of vat dyes, improved launderability, waterproofing with silicones, and use of anti-

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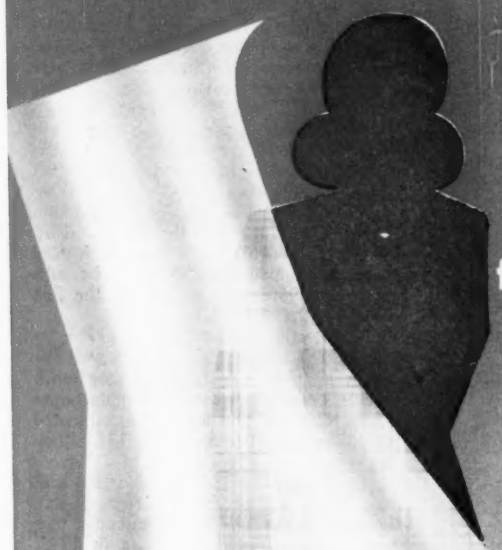
for all fibers and fabrics



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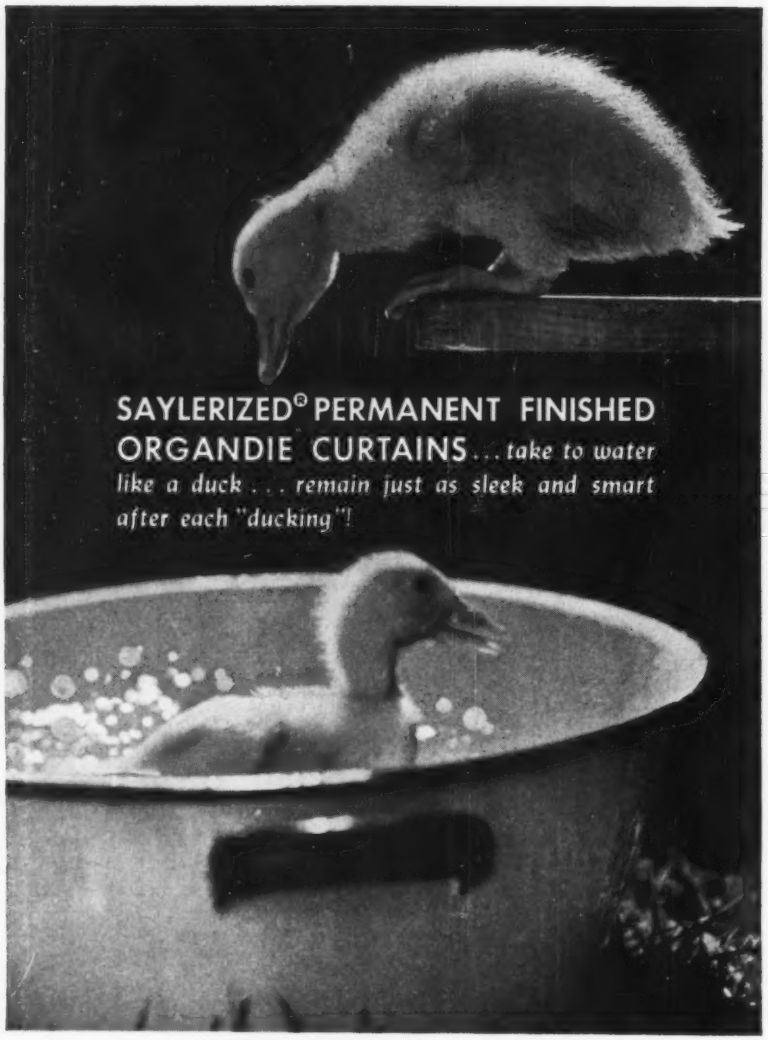
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septic finishes should all help to increase the sale of cottons in 1954.

Output for the year as a whole may average around 8% less in 1954 than in 1953.

WOOL. Output of woolen and worsted goods in the first seven months of 1953 was 13% more than a year ago, but in August mill production dropped off, and the latter part of the year made fall output in 1953 substantially below a year ago.

Consumption of fibers on the woolen and worsted systems was much improved in 1953. During the first eight months, fiber used was 17% ahead of a year ago and just equal to 1951. Consumption of apparel wool was up 15% from a year ago but was 5% below 1951.

In the men's clothing field, an estimated 21-million suits was cut in 1953. In the first nine months of the year, there were 18% more suits cut than in the same period of 1952 and 5% more than in 1951.

Summer suits made a much bigger gain than regular weight suits: 29% vs. 15% over last year. Although the proportion of regular-weight suits made with 50% or more of wool has remained about unchanged over the last three years, lightweight suits with more than half wool content dropped from 49% of the suits made in 1950 to only 26% in the first nine months of 1953.

Carpet-wool consumption in 1953 revived 28% above 1952, but it was 5% below 1951 and was still almost one-fourth smaller than the first eight months of 1950. Consumption for 1953 is estimated at 133-million lbs.; for 1954, 125-million lbs.

Total yards of wool-and-rayon rugs woven has increased steadily from 61-million sq. yds. in 1951 to 62-million a year ago to an estimated 65-million in 1953, with a forecast of 61-million in 1954.

Rayon has fallen from 23% of the poundage in 1951 to 17% in 1952 and 16% in 1953.

Rapid inroads have been made in the floor-cover field in the last few years by cotton broad-woven rugs, produced at the rate of 25-million sq. yds. in 1953. This trend is expected to continue.

Large stocks, coupled with falling prices, are expected to reduce over-all wool volume in 1954 to 8% below 1953.

SYNTHETICS. In the first six months of 1953, rayon broad-woven production was 1,026-million yds.—16% above 1952 but 19% below the same 1951 period.

Prices remained relatively depressed, and profit margins were generally less favorable than cottons. Filament rayons had a better year than spun rayons, reversing the 1952 picture. Mills producing 100% filament rayon and acetate fabrics poured out 25% more goods in the first half of 1953 than the same period of either of the two preceding years. However, spun-rayon yardage was up only 8% over a year ago and was just about even with 1951. Combination filament-and-spun rayon fabrics scored a 20% production loss from 1952 to 1953.

For rayon, 1953 was a year of "profitless prosperity," wherein large quantities of

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The Reference Data Section contains 73 pages of useful production and reference information, for example, the Yarn-Conversion Table on page 6 and the Loom-Production Table on page 18. Pages 6 through 71 contain a wealth of similar data on Cotton, Wool, Synthetics, as well as helpful information on Knitting, Bleaching, Dyeing, Finishing, and General Mill Engineering.

In the back of this issue on pages 311 to 379, you'll find a Classified List of companies supplying products and services to the industry. This list contains over 2000 products and services, *and is the only one of its kind in existence!*

Besides all this, 265 companies have supplemented their product listings with detailed information about their products in their advertising space. Such information is page-referenced in the Classified List, thereby giving you a fuller story on a product or a service.

After you have examined this issue, and evaluated its time-saving features, remember to . . .

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goods were made and sold, but prices continued to be relatively poor.

Two divergent trends marked the 1953 output record of man-made fibers other than rayon. Growth in nylon halted abruptly, and production in the second quarter was slightly less than in the same period a year ago. Other synthetics increased 23% during the period from 1952 to 1953.

Cotton made important inroads on rayon in the women's dress trade. Rayon fell from 72% of the unit-priced dress total in 1950, to 67% in 1952, and to only 56% in the first half of 1953. In the dozen-price dress field, the drop was from 16% to 11%.

In 1950, 60% of blouses were made of rayon. In the first half of 1953, the percentage dropped to 25. Nylon in the blouse field doubled over the same period, rising to 17% of the total.

Only in the rayon-suit field has rayon held the ground gained from wool.

In men's shirts, rayon dropped from 58% of the total in 1951, to 51% in 1952, and to 45% in the first nine months of 1953.

Reflecting the relatively more favorable conditions in filament rayons during 1953, raw stocks of filament fell from a cyclical high of 102-million lbs. in March 1952 to a low point of only 57-million lbs. in June of 1953. From that point, stocks commenced rising and by end of September were up to around 70-million lbs.

Stocks of the rayon staple, however, had been increasing since March 1953. They rose from 16-million lbs. to 36-million, the highest level on record, and nearly double the peak accumulation in the 1949 recession.

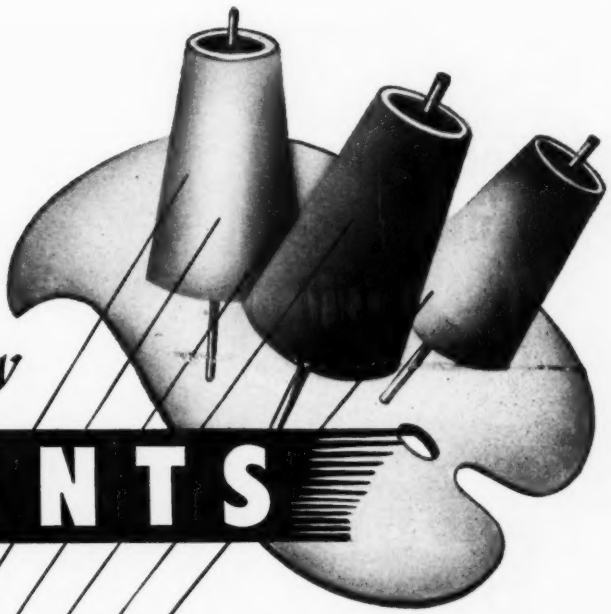
Although 1953 has been a more favorable year for filament rayons than spun, the outlook for 1954 and for the long run is still more favorable for spun-rayon fabrics.

Blends and mixtures of rayon with cotton, wool, and other synthetics were running 19% above a year ago; 100% glass fabrics were up 26%; pile, drapery, and upholstery fabrics scored a 27% gain; and 61% more saran monofilaments were woven in 1953 than in 1952. These are the fastest growing segments of the industry, and these trends are expected to continue.

Rayon tire-cord production was up 14% from 1952 to 1953, but for the first time in its history it was experiencing a downward trend. Domestic shipments of viscose high-tenacity fiber fell from 42.6-million lbs. in March to 34.6-million lbs. in September.

Rayon producers are improving the quality of their products to regain markets. New dope-dyed yarns are a hope for the future. But retrenchment has come late. Outlook is for a decline of about 12% in output from 1953 to 1954. Other synthetics, as a group, will show only a small decline.

KNITTING. Knitted underwear and night-wear shipments in the first nine months of 1953 were $176,799,000, off slightly from 1952. Shipments for the third quarter of 1953 were $80,838,000—a fraction above production for the same period



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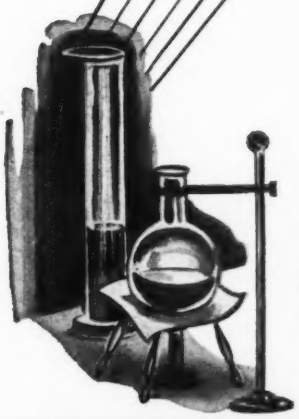

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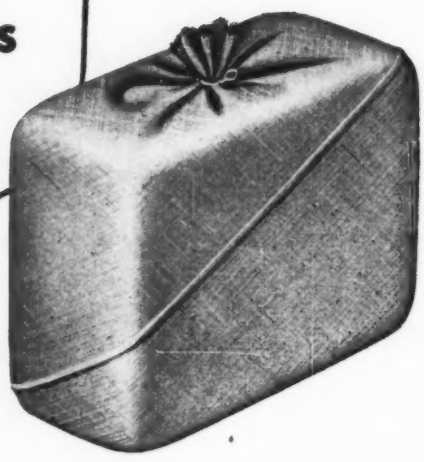

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last year. Shipments this year have closely followed the pattern of last year: low production in the first quarter, with an increase to a peak in the third quarter. Knitted outerwear, on the other hand, showed a 19% increase in shipments in the first nine months of 1953 over 1952. Shipments were $14,085,000 for the third quarter compared with $13,310,000 for the same quarter in 1952.

Full-fashioned-hosiery production has been running slightly less than last year. Shipments were 36,313,000 dozens of pairs for the first three quarters of 1953 compared with 37,622,000 for the same period of 1952.

While production of full-fashioned hosiery has declined, full-length seamless hosiery has been running ahead of last year. Shipments for the first nine months of 1953 were 6,382,000 dozens of pairs compared with 5,413,000 in 1952.

Full-fashioned mills will remember 1952 as a difficult year. Profits were low, and some mills had to close. Conditions are expected to improve slightly with increases in population and few or no newcomers in the industry. An advertising campaign by machine builders, who have also been hard hit by the depressing conditions, is expected to stimulate sales.

Business in 72-gauge and 75-gauge hose is reported good. Small-section machines will be used in increasing quantities in these gauges until the multisection-machine builders get into the market. An 84-gauge machine will then probably be made by a small-section-machine builder.

Women's seamless-hosiery producers had a good year, and business is expected to continue good with the recent introduction of the 474-needle machine.

Helanca nylon-sock production is increasing, and it won't be until late in the year that these hard-wearing socks will reduce orders. Argyle production is slackening off, and new designs will be made to spark sales. A big market is seen for fine-gauge argyles in Helanca yarn. Knitters of cotton socks are finding profits difficult to maintain, and some will swing over to synthetics and blends.

Tricot knitters are trying new designs in dope-dyed yarns and stabilized cloths as the market for acetate and nylon jersey becomes more competitive. New end uses for these products, such as bed sheets, are being found. Dacron is finding favor among knitters and buyers, but knitters must use dull nylon with the Dacron to make the fabric opaque.

Raschel machines are being speeded up, and more of these machines are being put into production to compete with tricot knitters in tulles and nets. More bathing-suit material in rubber and nylon will be made on these machines.

The outerwear knitters had a good year in 1953. Full-fashioned knitters and machine builders have envied the outerwear men's prosperity and have talked about entering this market. The outerwear men fear this move, but quality-minded hosiery men could introduce new ideas such as women's full-fashioned suits in Dacron-wool blends.

The underwear market has remained stable, and is expected to remain good during 1954.

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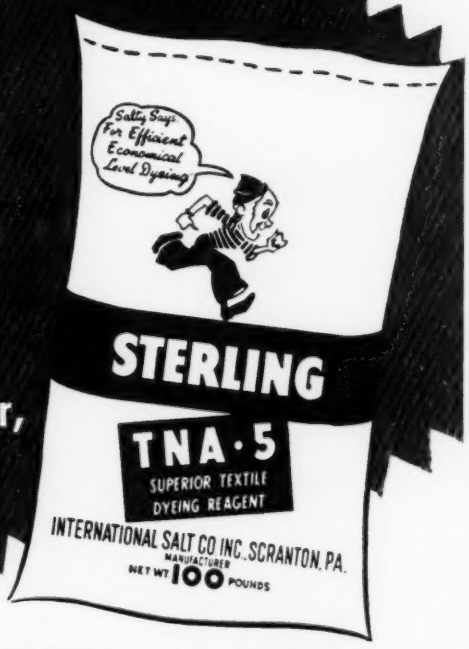

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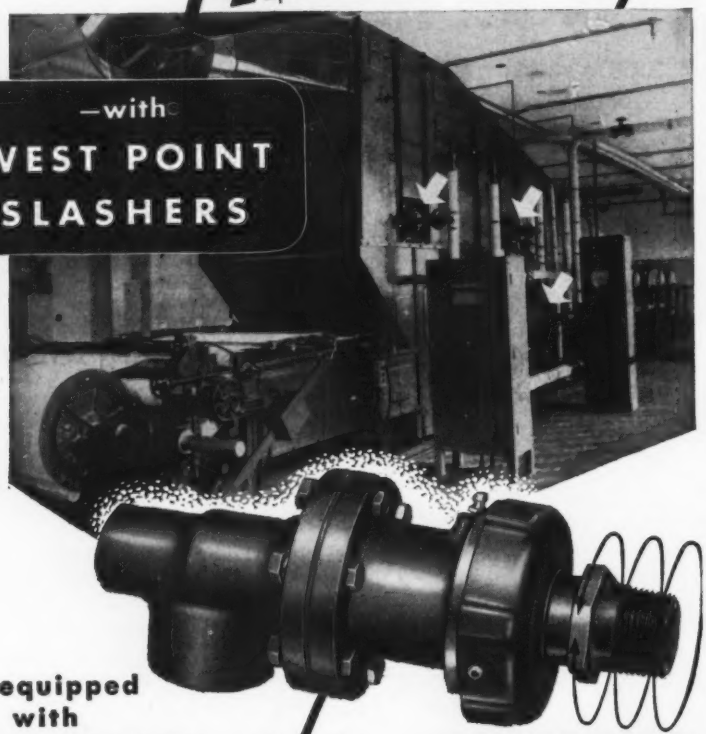

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Washington Outlook

CONTINUED FROM PAGE 95

1954. Total number of men in Armed Services is about 3.3-million. Though this number may be reduced by 100,000, the important figure is the number of replacements. The Army, for example, will lose about 700,000 men and probably will replace around 650,000. While some textile materials can be reused, there is still a significant need for personal equipment.

With the Eisenhower Administration searching hard for ways to cut its current expenses, you can look for a good deal more delivery-date toughness, as the clothing suppliers will be trying to schedule their deliveries more tightly than in the past.

Other factors that will affect procurement in 1954 include the development of new materials and fabrics. The Army, for example, has under development several new cold-weather uniforms. One of the most promising uses a soft, rubber-like synthetic plastic to provide waterproofing and insulation. Promise is also seen in a new chicken-feather-filled batt-type lining to replace the usual frieze lining.

The Navy has developed a new 22-oz. melton fabric construction for overcoat use that promises to extend wear 50 to 100% and save 10% in wool costs and 20% in processing.

LABOR. Out of the glow from recurring fireworks over the Taft-Hartley Act, one thing shows clear: if any changes are made in the law, Congress will take care of a criticism first leveled by President Eisenhower a year ago.

He termed it "union busting" not to permit economic strikers to vote in representation elections along with their replacements. The amendment would give both striker and worker an equal voice in picking a bargaining representative.

Labor Secretary Mitchell led the Administration program for altering Taft-Hartley, holding as near to the middle of the road as he could. But he couldn't hope to satisfy both labor and management; so the battle figures to continue for some time.

Congressional Taft-Hartley chieftain for the GOP, New York's Senator Ives, has indicated he'll try to avoid a repetition of last year's extensive hearings on the law. But the Democratic strategy may be to keep things stirred up to give labor a forum to take out after the Administration.

Labor may be happier—but not much—with the Administration program to raise the present 75¢-an-hour

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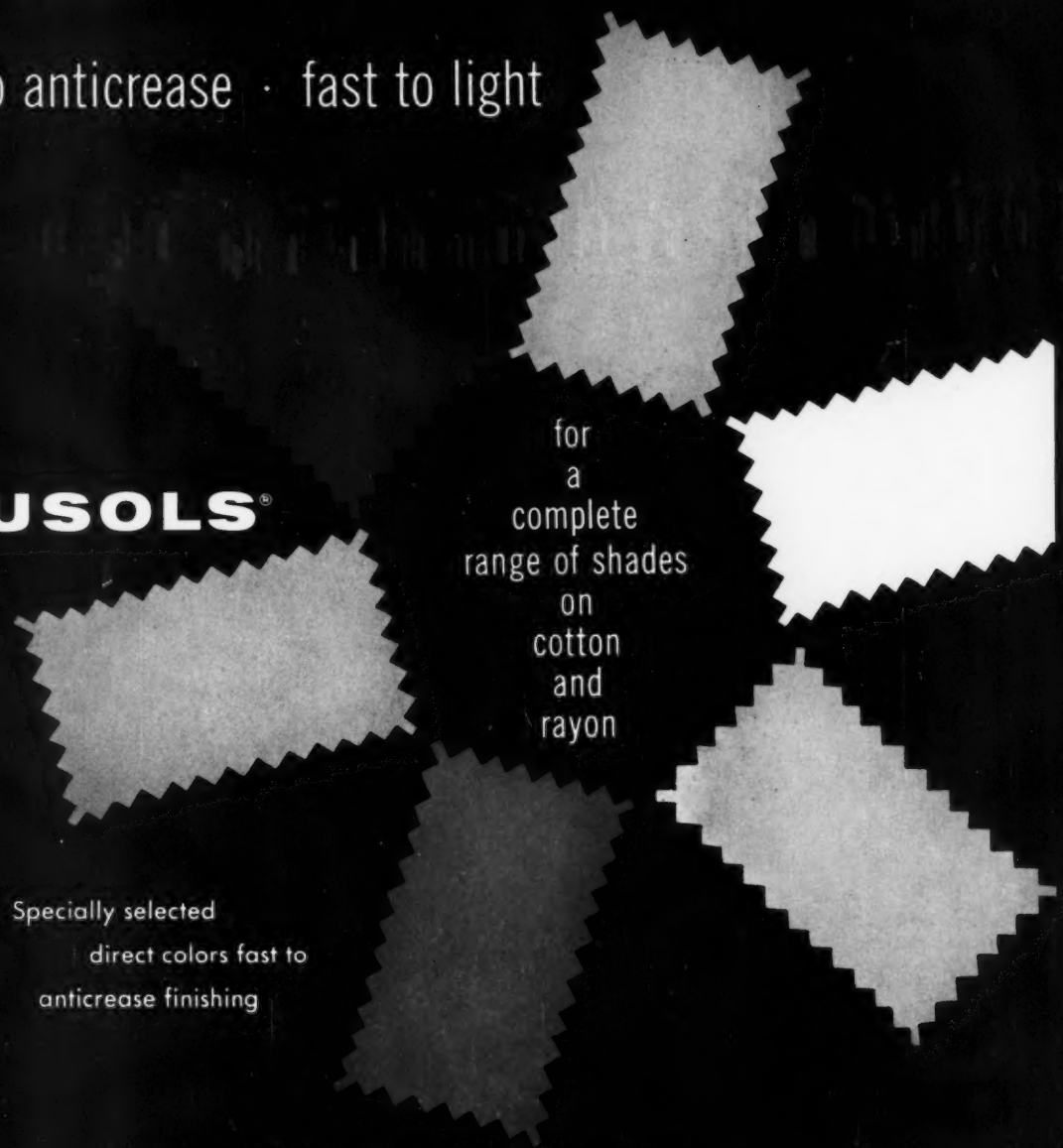

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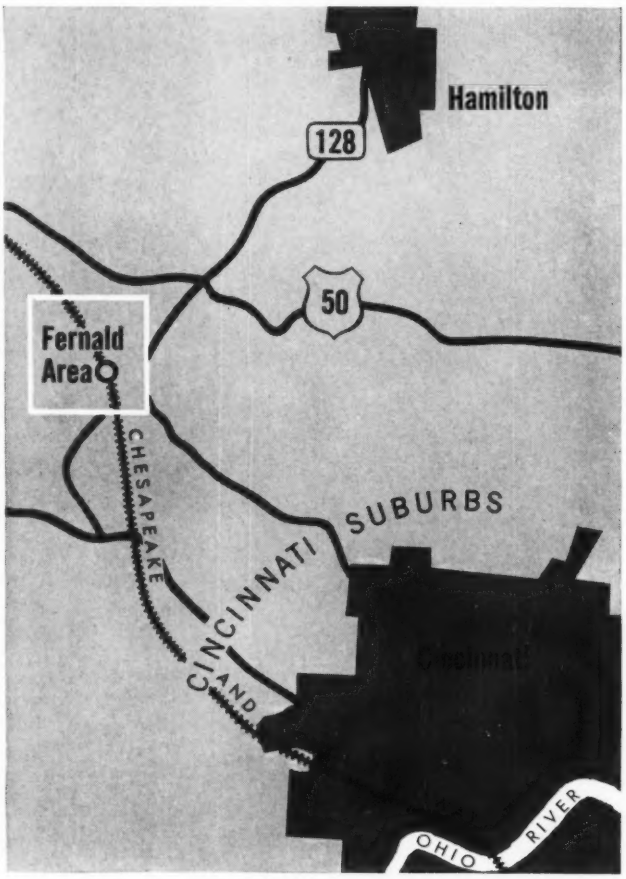

Chesapeake and Ohio Railway

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minimum wage. Mitchell backed an increase to take care of the 13% hike in living costs since the present minimum went into effect in January, 1950. But both the AFL and CIO wanted at least $1.25.

The AFL-CIO "no raiding" pact faces a stormy future, almost as stormy as the tempest stirred up by the bitter rivalries between their two textile unions. Even with textile signatures on the pact, it won't settle the problem of membership raids.

WRITE-OFFS. The Government's fast-tax-write-off program to stimulate expansion of defense facilities is petering out, since most of the goals have already been achieved, on paper at least.

The only synthetic-fiber-expansion goal established was for nylon. The goal was 300-million lbs. annual capacity by January 1, 1956, an increase of 200-million lbs. Before the goal was officially established, however, the Government granted fast tax write-offs to North American Rayon for expansion of tire-yarn capacity and to Chemstrand Corp. for Acrilan.

About nine tax-write-off certificates have been issued to Du Pont, American Enka, Chemstrand, and Allied Chemical & Dye for expansion of nylon facilities. They cover new capacity to produce 170-million lbs. annually. At press time, ODM was considering an additional certificate for nylon expansion to Industrial Rayon Corp. The nylon expansion goal had previously been frozen at 170-million lbs.; Chemstrand's 30-million-lb. expansion in Acrilan had been treated as part of the nylon expansion program for bookkeeping purposes. While American Cyanamid did not receive a certificate for X-51, it received one for acrylic resins to be used in making the fiber.

PRICE SUPPORTS. Farm-price supports may be one of the biggest issues of the year. Congress is due to pass either a Republican farm program or a measure continuing the price-support laws that they inherited from the Democrats. This wrangle may be a running fight right down to the closing of the session.

The proposals for a two-price system, which would give growers 90% price support only on that portion of their crop that is consumed domestically, may be a possibility for wheat; but it hardly seems a possibility for cotton. Reason: by and large, cotton farmers are solidly in favor of a guaranteed 90% of parity price and in December voted overwhelmingly for an almost 25% acreage reduction.

Southern Democrats have suggested

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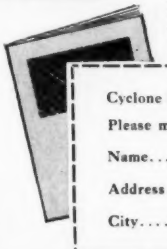

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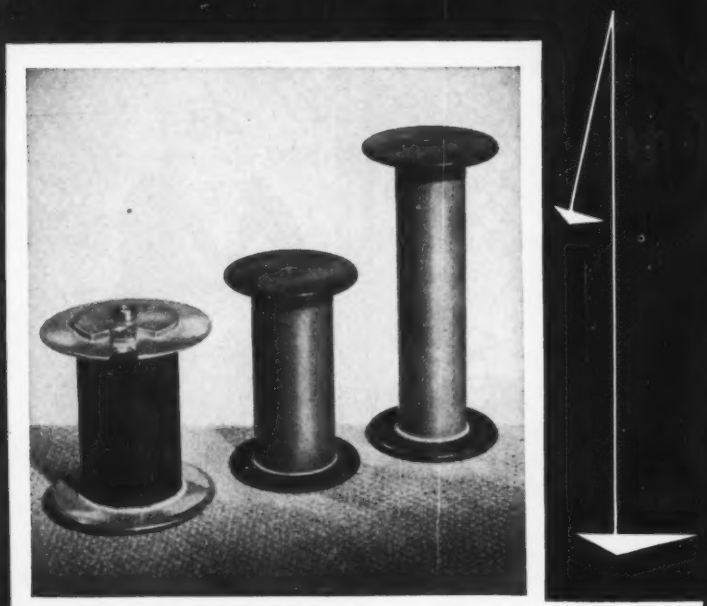

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WINDER SPINNER BOBBINS—with bakelite barrels and vulcanized fiber heads give greater impact strengths and lower costs (than all-bakelite) where steaming is not required.

EVEN LOADING, VIBRATIONLESS RUNNING—Mack Bobbins are thoroughly tested for strength, concentricity, dimensional accuracy and vibration. Mack high-speed bobbins can be dynamically balanced on our Gisholt bobbin balancing machine.

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that farm policy may be the crucial issue in next fall's Congressional elections. In any case, the odds favor both parties bidding for farm-bloc support.

CONTROLS. Controls are now mainly a matter of backstage planning in Washington. In the economic-stabilization field, there aren't even any stand-by controls on the books, except for residential credit and rent control for critical defense areas. But there are some limited production controls in operation, and the Administration has authority for full-scale production restrictions. These controls are now limited to allocations on titanium and priority requirements for defense contractors on procurement of strategic materials and equipment.

The Office of Defense Mobilization is working up detailed plans for controls on prices, wages, rent, and consumer credit. These would be quickly submitted to Congress in case of an emergency. They already reflect the Administration's objective to emphasize indirect controls, rather than direct measures, to combat inflation. This policy means greater use of credit and fiscal measures, as well as the development of new techniques "to reduce the burden of controls to the maximum extent consistent with effective stabilization."

Cotton-Fiber Testing

CONTINUED FROM PAGE 131

oughness necessary to make the specimens representative.

How Sample Testing Was Done

Samples from lots of cotton were individually blended on mill equipment. After a second carding at SRRL, the check samples for each lot were packaged in either card-sliver or card-web samples.

Nine of these lots were tested at SRRL. Ten tests were made on each of 10 samples taken from each of the lots. The tests for length, strength, and fineness were made under standard conditions.

In 1951, two check samples from each of five lots, ten in all, were sent one at a time at two-week intervals to 83 laboratories. The laboratories were requested to perform the tests according to the regular procedures used by each laboratory. The number of laboratories reporting results were 55 for tests with the Fibrograph, 69 for the Pressley, and 55 for the Micronaire.

In 1952, four check samples were

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sent to 142 laboratories in one mail-

Why mills like

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Courtaulds' solution-dyed rayon staple of proven colorfastness. Since '38 . . . produced in vast quantities for American and British mills

For 15 long years, mills have been processing Courtaulds' solution-dyed rayon staple on a vast scale. They like its outstanding colorfastness and its many other advantages.

The price advantage! Coloray offers substantial savings over stock, yarn or piece-dyeing . . . adds brilliance and bloom . . . even enriches the hand of the finished fabric . . . gives you a tremendous quality advantage as well.

Color blending is easy with Coloray. And the possibilities are unlimited! Over 2,000 different color effects have been achieved by Courtaulds. You can get true solids, rich heather tones, a remarkable range of shades and textures. And Coloray blends beautifully with other fibers — acetate, wool, cotton, the new synthetics.

Colors are uniform — side to side, end to end, batch to batch. No color variation at all! Color can be identical in different weights of fabric. Matching problems are gone for good.

You can buy small or large quantities — any amount of Coloray from pounds to bales.

Fly problem minimized — just follow Courtaulds' scientific sequence in running your colors, and practice simple good housekeeping in the mill.

Of course, no fiber is problem-proof. Not even Coloray. But Courtaulds knows how to solve or lighten any problem you might have. Courtaulds' unique 15-year know-how in producing and processing solution-dyed fibers is at your service, via a staff of expert technicians.

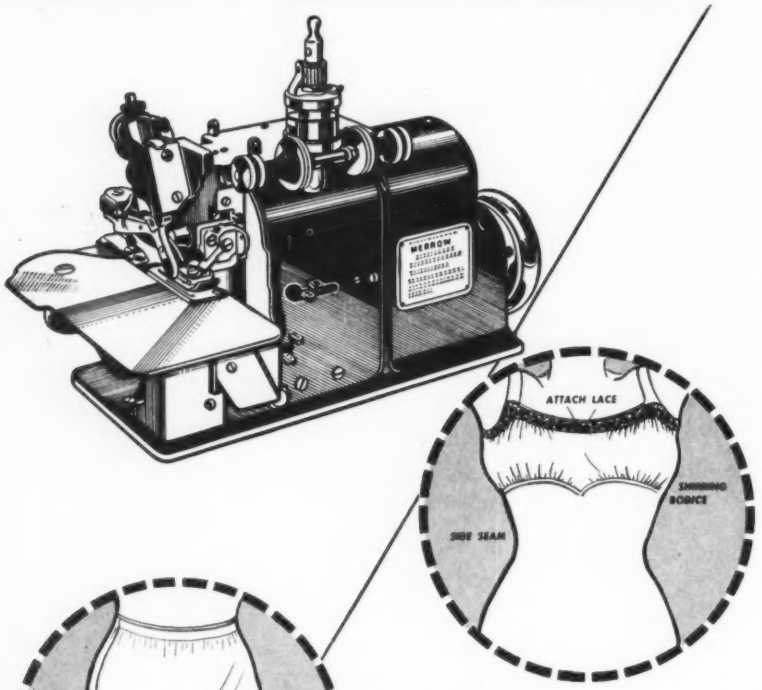
Coloray and white rayon staple are produced in Courtaulds' new plant at LeMoyne, Alabama. Thirteen basic colors are available in these deniers and staple lengths: 1½ denier — 1⅜" staple, 3 denier — 2" staple, 4½ denier — 6" staple.

For further information, write Fabric Development Dept.

COURTAULDS, INC., *first name in man-made fibers, first name in solution-dyeing*

600 Fifth Avenue, New York 20, N. Y. • Greensboro, N. C. • LeMoyne, Ala.

MERROW CLASS A MACHINES
ELIMINATE PRODUCTION BOTTLENECKS



Because of their flexibility, "Merrows" can eliminate tie-ups in your production. The adaptability of a "Merrow" to various operations makes it useful in breaking bottlenecks.
Smooth, high speed operation guarantees maximum output. Simplicity of design, sturdy construction and ready interchangeability of parts minimize "down time"
Merrow Class A Machines are extensively used for overseaming, overedging, hemming and shirring in the manufacture of gowns and pajamas, panties, slips, infants' wear, corsets and girdles, athletic shirts and T shirts.
Why not take advantage of Merrow experience in solving your problems? We will be glad to demonstrate the work of these machines on your own garments.

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ESTABLISHED 1838 INCORPORATED 1899
2803 LAUREL STREET•HARTFORD•CONN., U.S.A.

Write for free illustrated bulletins.

sent to 142 laboratories in one mailing. The laboratories were requested to use specific ASTM or instrument makers' methods and to check the balances used with standard weights. Laboratories reporting: 66 for the Fibrograph, 86 for the Pressley, and 100 for the Micronaire.

The number of selected laboratories meeting the three criteria were: 12 on the Fibrograph, 25 on the Pressley, and 11 on the Micronaire.

The results provided symmetrical data for analysis and comparison of testing precision within and between laboratories.

Transmission Belts

CONTINUED FROM PAGE 123

where D = diameter of the larger pulley in inches
d = diameter of the smaller pulley in inches
C = distance between pulley centers in inches

This formula gives the smaller angle of belt contact. If an idler is used, it is safe to estimate the belt angle from the position of the idler on the new belt (usually 10° more than calculated above).

The horsepower capacity chart is based on the following formula:

$$(4)\quad hp = S\,\frac{(T_1 - T_c)\,(1 - 1/R)}{33{,}000}$$

hp = horsepower capacity per inch per ply
T_1 = proper tight-side tension for fabric involved in pounds
T_c = centrifugal tension in pounds

$$= \frac{w\,S^2}{3{,}600g}$$

R = ratio of tight side to slack side tension

$$= \epsilon^{\mu\theta} = \frac{T_1 - T_c}{T_2 - T_c}$$

W = 0.03 lb., the average weight of belting per inch of width per ply per foot of length
S = belt speed in feet per minute
g = the acceleration of gravity, 32.2 ft. per sec.
ϵ = base of Naperian logarithm = 2.71828
μ = coefficient of belt-pulley friction = 0.22 @ 180°
θ = angle of belt contact in radians
T_2 = slack side tension

This equation shows that belt horsepower depends upon and varies with the speed angle of a belt and the coefficient of friction.

It will be noted that the three curves of 28-, 32-, and 35-oz. fabric achieve horsepower maxima between belt speeds of 5,000 and 6,000 ft. per min.

Normal high speed is 4,000 to 5,500 ft. per min. Medium speed is 3,000 to

Tallassee Switches to Pearl Starch ...and GAULIN Homogenizers

AND HERE'S THE RESULT as told by management of the Tallassee Mills in Alabama:

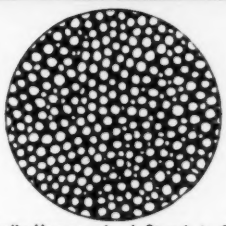
"Since we started to Gaulin-Homogenize our size, we have less shedding at the loom and slasher. Our weave room efficiency is slightly higher. We have a more uniform size that's easier to keep within our weight tolerances. Yet — we've switched to Pearl Starch. We figure the *savings in starch alone* will pay for our two Gaulins in a year."

EXPERIENCE IN HUNDREDS OF MILLS

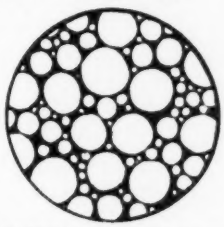
By converting starch mechanically, instead of thermally, a Gaulin Homogenizer furnishes a finer size . . . with a stable and uniform viscosity.

It penetrates yarn lightly but evenly . . . bonds fibers together smoothly, firmly — without coating or matting and making them brittle.

Experience in hundreds of mills *proves* Gaulin-Homogenized Size costs less . . . provides better pickup . . . makes a ***stronger, more elastic*** yarn.



Gaulin-Homogenized Starch is fine, regular and evenly mixed.



Boiled Starch is comparatively coarse, irregular and unevenly mixed.

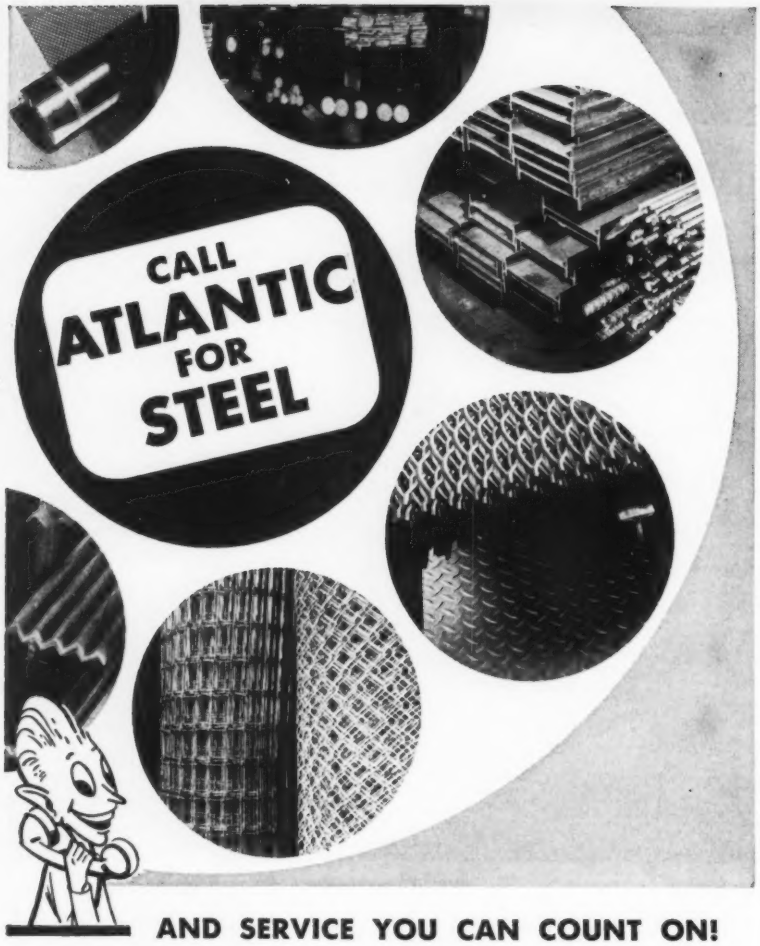
SYNTHETICS — WORSTEDS

Mills are now preparing better sizes for Synthetics and Worsteds, too, by Gaulin-Homogenization. Faster, more uniform results are reported at substantially lower costs.

MANTON-GAULIN
MANUFACTURING COMPANY, INC.
70 GARDEN STREET, EVERETT 49, MASS.

Southern Representative: W. A. Hewitt
P. O. Box 961, Greenville, South Carolina

World's Largest Manufacturer of Homogenizers, Triplex Stainless-Steel, High Pressure Pumps, and Colloid Mills



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ft. per min. Medium speed is 3,000 to 4,000 ft. per min., and low speed is 2,500 to 3,000 ft. per min. Still lower speeds are possible but are often impractical.

A belt with the proper *WP* product and in good proportion according to Table 3 should be examined for flexibility by checking the number of plies against the pulley diameters in Table 2. When pulleys are below the minimum diameter, the sizes of both the driving and driven pulleys should be increased unless a thinner belt of heavier fabric will suffice.

The normal pulley diameters of Table 2 will allow maximum belt life. As the diameter gets smaller, the rubber and fabric tend to fatigue and cause "bootlegging" and splice failures. Since tension ratios tend to be less than 2.00 as the pulley size approaches the minimum limit in Table 2 (because of the application of more tension than actually required to do the job), minimum-size pulleys require greater installation care to obtain maximum belt life. Pulleys of this size are not safe.

Increased Loom Production

CONTINUED FROM PAGE 109

In this position, the arm of the lizard rests in front of the filling-motion shipper arm.

2. When the filling breaks or runs out, the filling-motion hook (bronze) engages the filling-fork holder and moves the filling-fork slide forward.

3. Then the lizard moves backward to position the lugs in the next notch. If the filling motion is functioning properly, the transfer of the filling is completed on this pick, and the lizard jumps forward into the original notch on the next left-hand pick.

4. If the transfer is not completed on this pick, the lizard crawls backward into a deeper notch to position the arm behind the filling-motion shipper arm. The transfer can still be completed at this position.

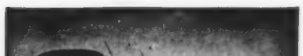
5. However, if the transfer is still not completed, the lizard remains in the deep notch and moves forward with the filling-fork slide on the next left-hand pick to push the filling-motion shipper arm to stop the loom.

Use These Three Settings To Make Fork Motions Work

Making the lizard crawl requires only good loomfixing and good maintenance practices:

Three simple settings are required to adjust the lizard:

1. Set the filling-fork slide so that the end of the slide is flush with the



back of the left-hand back box plate when the lay is at front center.

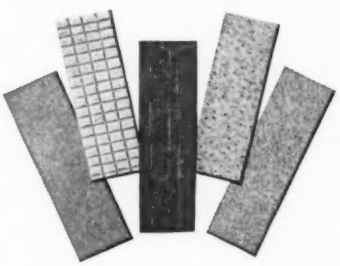
Holding power and smoothness in one take-up roll cover

If the fabrics you weave require a smooth, non-marking take-up roll cover, Armstrong's NO-732 Accotex Covering should be on your take-up rolls.

A special synthetic rubber gives this smooth, long-lasting cover just about twice the take-up tension you'd expect from a rubber material.

Get a sample of NO-732 from your Armstrong man. Test its smoothness with your fingers, its holding power on your shirtsleeve. Then give it a real test on your looms. Armstrong Cork Company, Textile Products Department, 6702 Dauphin Street, Lancaster, Penna.

ARMSTRONG OFFERS A FULL LINE OF TAKE-UP ROLL COVERINGS

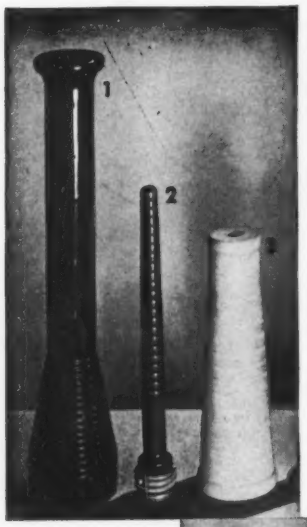


Armstrong can supply a cover to fit your needs, in synthetic rubber, cork-and-rubber, plain cork, or gridded cork.

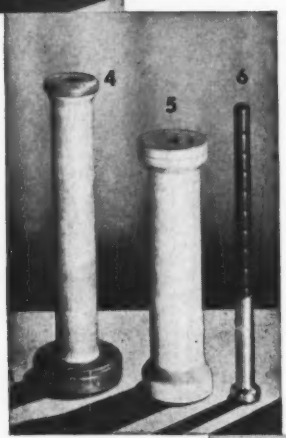
AVAILABLE FOR EXPORT

ARMSTRONG'S TAKE-UP ROLL COVERS

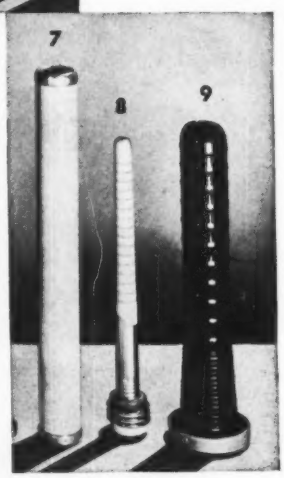
Product of the Armstrong Cork Company, Textile Products Department, Lancaster, Pa.



LOWELL
Bobbins, Cones Rolls & Tubes



1 Ring spinning bobbin
2 Automatic loom bobbin
3 Winder cone
4 Worsted twister bobbin
5 Winder tube
6 Bobbin for non-automatic loom with electric feeler motion
7 Warp spinning tube
8 Automatic loom bobbin for electric feeler motion
9 Worsted spinning bobbin



Lowell bobbins, cones, rolls and tubes are made from maple, birch or beech wood, as required. All wood is thoroughly seasoned, air dried and properly cured in a modern dry kiln. Bobbins are finished with oil, lacquer, shellac or enamel (baked on) as specified. Inspection is rigid and only perfect products are passed for shipment.

MAY WE QUOTE ON YOUR REQUIREMENTS?

LOWELL SHUTTLE COMPANY
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SALES REPRESENTATIVES
Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P. O. Box 778, Atlanta, Ga.; West Philadelphia Supply Co., Emerald and Somerset Sts., Philadelphia, Pa.; E. B. Smith, P. O. Box 3085, Greenville, S. C.

back of the left-hand back box plate when the lay is at front center.

2. Set the filling-motion hook level. Both the front and back must be an equal distance from the floor.

3. Time the filling cam to start moving the filling-motion hook at the same time that the fork prongs touch the filling yarn as the lay moves toward the front-center position.

Lost motion in any part of the filling-changing mechanism often causes the lizard to remain stationary or causes it to jump out of the notch and over the filling-motion shipper arm without stopping the loom.

If the lizard does not crawl and stop the loom, serious results will follow. The loom will continue to operate with the filling-changing mechanism trying to function on every second pick. When this condition exists, the let-back motion will stop the take-up motion from operating and the warp will often become so slack that the shuttle will fly out of the warp shed.

Often, too, the shuttle feeler strikes the shuttle each time the shuttle enters the right-hand shuttle box and scars and damages the shuttle. Warp break-outs, thin places in the cloth, broken shuttles, broken transferrer or other loom parts, and even injuries to employees are sometimes caused by improperly operating lizards.

Judge a Loomfixer's Skill By the Way His Lizards Work

How well a loomfixer keeps his lizards operating is a good way to judge his loomfixing ability. If all his lizards crawl and stop the looms, it is a pretty good indication that his looms are in good condition generally and that he takes pride in proper maintenance. On the other hand, if some of his lizards do not operate correctly, it shows that he is negligent in the maintenance of the small parts of his looms and should be watched and supervised closely.

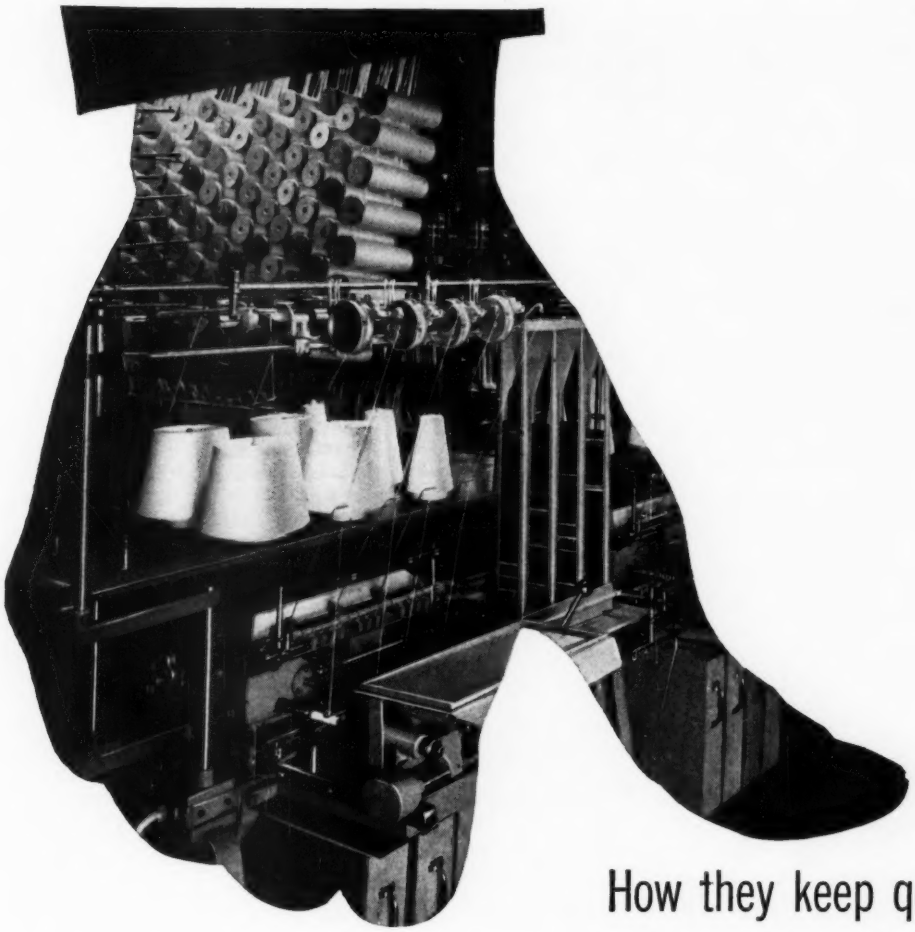
To check the working condition of lizards, it is not necessary to stop the loom or break the filling. You can leave looms (40 ins. wide or less) running, hold the shuttle feeler with the right hand, press the filling-fork holder into the notch of the filling-motion hook with the left hand, and hold it there for three successive left-hand picks. If the lizard is operating correctly, the loom will stop on the third left-hand pick.

To check lizard operation on wider looms, you must break the filling or have a second person hold either the shuttle feeler or the filling-fork holder.

Only about 10 secs. are required to check each loom this way; and a frequent check will result in better cloth, increased production, better loom maintenance, and lower costs.

For more information, write direct or use Reader Service post card.

New Throwing Formalas



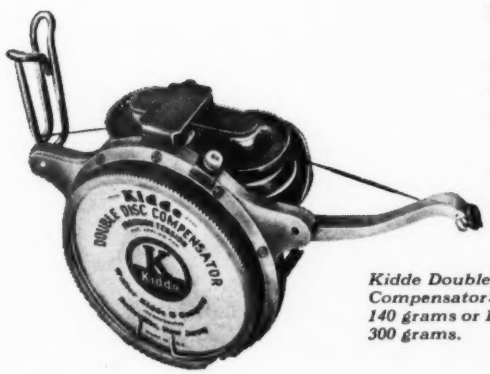
How they keep quill winding under their thumb at the Jean Ribbon Mills, Inc.

The Jean Ribbon Mills, Inc. of Paterson, New Jersey, makers of quality narrow fabrics, control quill winding on their German-made Hacoba quiller with Kidde Double Disc Tension Compensators.

They report they have fewer faulty quills, with fabric widths more uniformly controlled. There are closer yardage differences from one quill to another, with an actual increase in yardage. This results in less down time of the loom and reduces yarn waste.

Kidde's complete line of tension compensators is used by more than 500 leading textile mills throughout the nation—a striking tribute to their effectiveness in solving any tension problem.

They can help you turn out better products at less cost! Write today for full information.



Kidde Double Disc Compensator: 10 to 140 grams or 100 to 300 grams.

Kidde

Walter Kidde & Company, Inc.
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Tennant-maintained floors at Bates Mfg. Co., Lewiston, Me.

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- **Makes floors easy to clean.**
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TENNANT FLOOR MAINTENANCE System

Established 1870

OFFICES IN PRINCIPAL CITIES

New Throwing Formalas

CONTINUED FROM PAGE 112

lum that gives a zero-load counterbalance over the normal swing; the pendulum can be loaded for any desired pretension. We added a twist head, which was designed so that the yarn sample could be twisted and then subjected to a tensile load without being removed from the instrument. Then a microscope was mounted so we could measure the yarn diameter and helical angle before and after twisting.

All testing was done at 70° F. and 65% r.h. A predetermined length of yarn that would give a final length of 12 ins. was used to give a known contraction with a known pretension in grams per denier. This sample was placed in the twist head and pendulum jaws, and the yarn diameter was measured with the microscope.

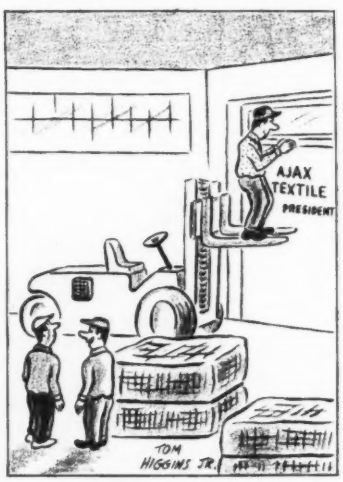
Next, the twist head was rotated until the yarn contracted to the 12-in. gauge length. The turns per inch were noted, and the diameter and twist angle were measured. Then, to make a stress-strain chart, the IP-2 jaws were clamped to the yarn at the 10-in. gauge point, and the stress-strain chart was made during loading to rupture.

The results were turns per inch, contraction, diameter, helical angle, tenacity, elongation, and toughness.

How the Formulas and Graphs Were Developed From the Data

The twist and contraction data revealed an excellent fit to the algebraic form: $y = ax^b$, where y = percent contraction and x = turns per inch; a and b are least-square constants that represent the intercept and slope of the graph.

The data for each denier of yarn were plotted as shown in Figs. 6, 7, 8, 9 and 10 (coefficients of correlation ranged from 0.95 to 0.99). The equa-



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For quick and efficient removal of normal textile sizes such as starch, dextrine, etc. Amprozyme Liquid is suitable for use with any type equipment (pad, jig, beck), or in continuous method after singeing. Amprozyme Liquid is adapted for high temperature desizing.

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High potency proteolytic enzyme for fast removal of protein sizes or deposits—glue, gelatin, albumin, etc.

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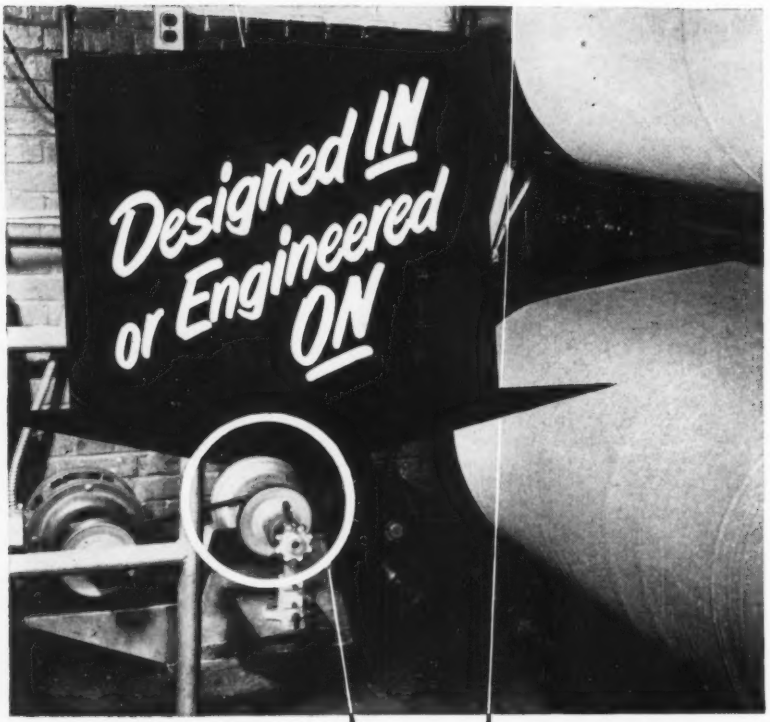
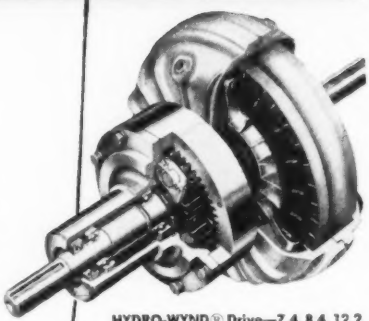
Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

We will be happy to send you complete details and samples of either one, or both, of these products. There is no obligation.



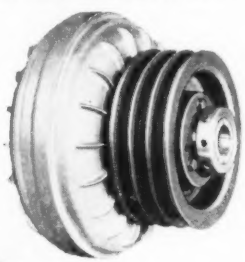
More and more manufacturers are designing the power-smoothing, shock-absorbing advantages of Twin Disc Fluid Couplings, HYDRO-SHEAVES® and HYDRO-WYNDS® into textile machinery and special textile drive assemblies. And more and more textile plants are turning to Twin Disc Dealers for engineered hydraulic modifications of mechanical drives, already in use on machinery needing protection from shock-loads and vibration.

Whether you desire *built-in* Fluid Drives, or wish to convert your present equipment—contact your nearby Authorized Twin Disc Hydraulic Dealer or Twin Disc Clutch Company, Hydraulic Division, Rockford, Ill.



HYDRO-WYND® Drive—7.4, 8.4, 12.2 sizes—winds with near constant tension, constant speed. Bulletin 163.

HYDRO-SHEAVE® Drive—¾ hp to 50 hp—complete package, slides right on motor shaft. Bulletin 145-B.



TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

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tions were calculated for each line, and the relationships between the equations were found to be primarily a function of denier. From these relationships, the formulas for finding contraction for each type of yarn were established.

The data on the effects of twist on breaking strength, elongation, toughness, diameter, and helical angle substantiated to some extent a similar study conducted at Georgia Institute of Technology. Some differences in the results can possibly be explained by the different techniques and changes in the yarns by the manufacturers.

Approximately 40 charts were prepared in connection with this study. Complete sets of the charts are available from the authors.

Research

(CONTINUED FROM PAGE 93)

Lowell Technological Institute:
Spinning qualities of new synthetic fibers

Wet-Processing Research

Cotton

Harris Research Laboratories:
Luster of cotton and its improvement by finishing

Institute of Textile Technology
Cyanoethylation of cotton

Southern Research Institute:
Mildewproofing of cellulosic fibers
Warp sizing on cotton and synthetic fibers

School of Textiles, N. C. State College:
Mercerization of cotton fibers without tension

Philadelphia Textile Institute:
Quality control of acetylated fabrics

Southern Regional Research Laboratory:
Applying phosphoric-acid derivatives to cotton fibers to achieve chemical union with the cellulose and thus obtain wash-resistant flameproofing
Treatments of cotton with organic compounds containing titanium or other flame-retarding elements to produce permanent flameproof qualities
Further development of partial acetylation of cotton—effect of cotton variety, improvement of the process, development of continuous processing range, methods for handling raw cotton, and increasing resistance to weathering
Continued studies of flameproofing of cotton by the THPC process, especially as applied to several kinds of fabrics
Continuing study on use of additives to improve the mildew, rot, and weather resistance of cotton at low cost
Improving the durability of awning fabrics

School of Textiles, Clemson Agricultural College:
Small-scale dyeing and finishing tests for cotton fabrics

Synthetic Fibers

Philadelphia Textile Institute:
Effect of high-temperature dyeing on properties
Dry-cleaning procedures and damage

Lowell Technological Institute:
Finishes for parachute textiles

DOW CORNING

silicone finishes

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OR CRISP AS THE FINEST WORSTEDS

Textile Finishes made with Dow Corning Silicones are the most durable of all water repellent finishes; impart a desirable and equally durable hand to fabrics woven of synthetic fibers or blends. For example, finishes made with Dow Corning Silicones can be made to last the life of the garment. They can be used to double the tear and abrasion resistance of the fabric; increase spot, stain and crease resistance; improve sewability. DeCetex finishes introduced six years ago by Dow Corning are now used in large quantities throughout the textile industry. Other excellent finishes made with Dow Corning Silicones are readily available from leading manufacturers of textile chemical specialties. There's sales making magic in these *silicone finishes.*

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Use of Dacron in parachute fabrics
Control of relaxation shrinkage and felting shrinkage in various fabrics

World Textile Picture

CONTINUED FROM PAGE 96

rayon mills, although raw-material shortages sometimes became acute.

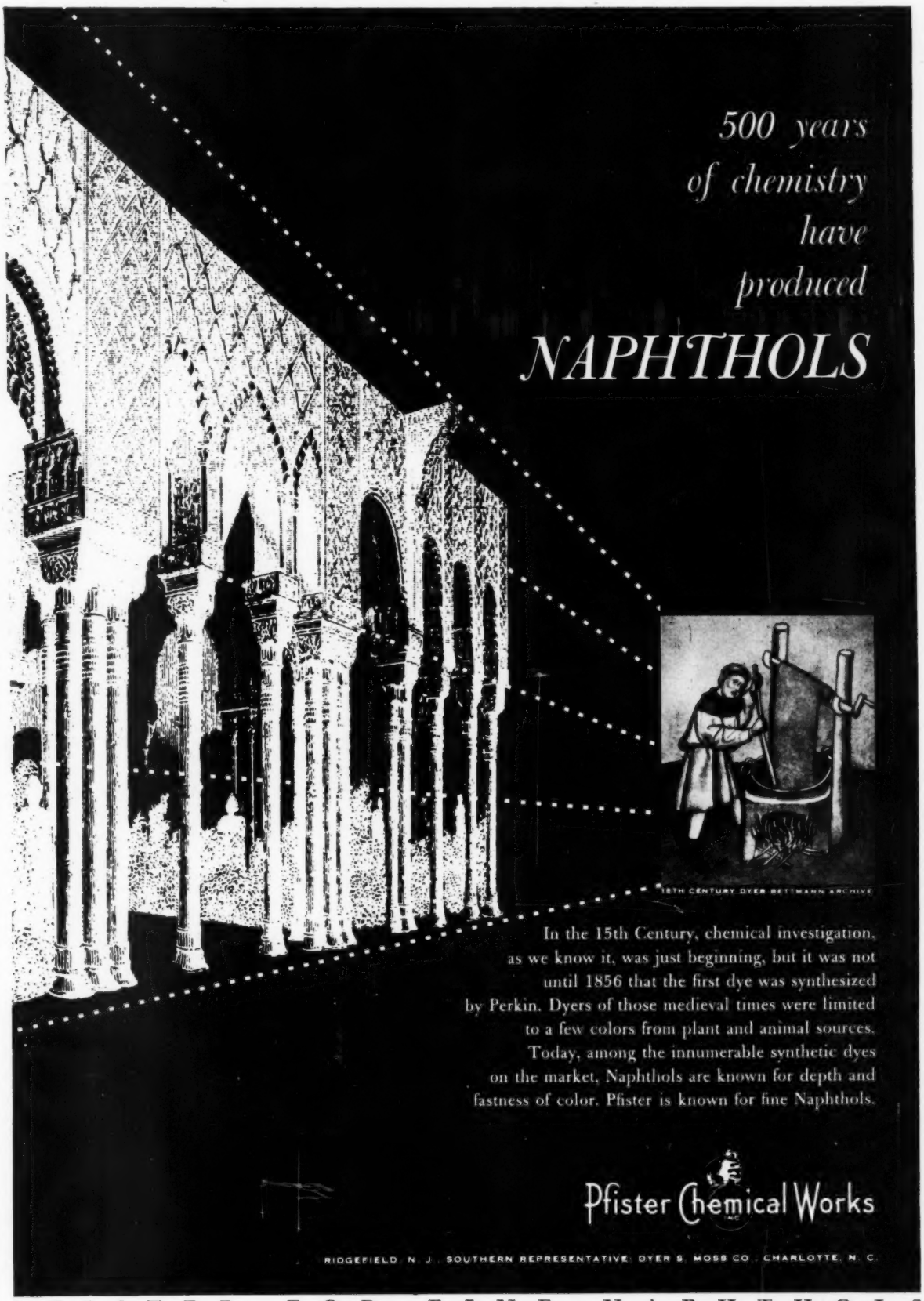
The import restrictions have been relaxed in late 1953, and further relaxations are predicted for 1954. The textile industry is prepared to ask for higher tariffs if the occasion demands such a course. Prospects for increased dollar imports are slim.

High labor rates, freight rates, and other costs prevent expansion in the face of foreign competition. Inflation seemed to be stopped toward the close of 1953, but all costs were at a high level.

To adjust operations to competitive conditions, many British and American production methods were introduced.

Obsolete machinery and equipment are burdening many mills, and replacements are needed on an ever-increasing scale. Continental suppliers are preparing to ship more machinery to Australia.

Although the labor situation was easier in 1953, there is a dearth of highly skilled workers. British textile immigrants have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the French textile industry have gradually

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workers. British textile immigrants have dropped to a low level.

Brazil

The textile industry in Brazil reported the lowest output of cotton goods since 1948. A general strike and power shortages were blamed for this reduced output.

Obsolete machinery (90% of the looms are nonautomatic, and many of them are 60 years old) is the obstacle to reducing prices to provide export markets. A report states that Brazil could export 5,000 tons of cotton yarn and 2,000,000 meters of cotton cloth per year if the prices were right.

Rayon production is expected to increase in 1954 with the opening of Fibra, a new Brazilian firm connected with Italian Snia Viscosa.

The outlook for 1954 might be more favorable if mills were not holding such high stocks accumulated during the high-cost years of 1951 and 1952.

Canada

The Canadian textile industry experienced lean times in 1953.

Imports of textile products into Canada have been on the increase for several years and continued to climb during 1953. Canadian producers are losing their share of the domestic market. Many producers attribute this situation to the dumping of foreign textiles, particularly American cottons and British woolens. Many cotton and rayon mills are running short weeks; and in December several woolen and worsted mills shut down for an indefinite period.

Producers, trade associations, and labor unions have petitioned the government for changes in the customs law that would prevent dumping.

Some relief has been promised, and a stamp dedicated to Canada's textile industry has been issued.

In contrast to the depressing picture painted by textile producers is the announcement of three new synthetic-fiber plants with an investment total of $100,000,000. They are the Canadian Chemical Co.'s acetate plant at Edmonton, Alberta; Canadian Industries Ltd.'s nylon intermediate plant at Maintland, Ont.; and the Imperial Chemical Industries of Canada, Ltd.'s Terylene plant near Kingston, Ont.

Denmark

The current "deposite rule" is forecast for early elimination, which will liberalize textile imports.

Although British imports hold the lead in Denmark, there seems to be no early expansion of sales. German textile producers are stepping up their exports.

Dominican Republic

No equipment changes were made in the Dominican Republic's cotton textile industry. Cotton-yarn production increased to 2,000,000 lbs. while cotton-cloth imports were down to 13,000,000 yds. Experiments with weaving synthetic fibers were not too successful, but burlap sacking is being woven from sisal on Scottish looms.

France

Since the slump of 1952, conditions in

the synthetic-fiber branch. The A. K. U. concern produced 143-million kgs. of rayon

the French textile industry have gradually improved. The production index stood at 102 (1938 index equals 100) in January 1953 and rose to 116 in October.

The industry still had unused capacity when production was at its highest. Progress toward modernization and increased productivity moved ahead only slowly.

Re-equipment must be pushed, inefficient units must be consolidated or eliminated, and productivity must be raised to compete in world textile markets. Industry feels that it cannot do much in this direction until the tax system is revised and the franc devalued.

The cotton textile industry received some encouragement from the creation of productivity boards within management and labor. The two boards are working together to improve efficiency and boost employee morale.

Germany

The German textile industry is still in the process of catching up with war damage and dislocation caused by the Iron Curtain. Located in the East Zone areas, the industry has had to relocate itself in the West Zone. As all funds have had to come from within the industry, the process has been difficult and slow.

The export problem is classified as the No. 1 problem because the industry must import 90% of its wool and all its cotton, jute, hemp, and sisal fibers. More foreign exchange is spent on these raw materials than the industry can earn.

The export market is in a slump, as underdeveloped countries are concentrating on purchasing investment goods at the expense of consumer goods. Export prices appear to be too high, and the industry feels that it cannot compete with other European textiles that are often subsidized.

No great scientific advances are expected to be made during 1954. The industry is concentrating on perfecting Perlon and other synthetic yarns and modernization of existing plants.

Guatemala

Early in 1953, the Guatemalan government banned raw-cotton imports and made importers purchase 50% in weight of their medium-and-low-price textiles from domestic sources. In spite of this regulation, no new mills have been put in production.

Italy

After last year's slump, the Italian textile industry showed signs of improving in 1953, particularly in the woolen and synthetic yarns and fabric sections.

Production does not exceed 60% of the industry's potential, and an effort is being made to re-equip home mills to the detriment of textile-machinery exports.

Nylon yarns are now being made in Naples. Annual production is expected to be 4,000 tons.

Exports are expected to be boosted by a government measure that considers the drawback of taxes and excise duties that are levied on goods for the home market.

Netherlands

A marked recovery was experienced in the Dutch textile industry during 1953, after the setback of 1952, particularly in

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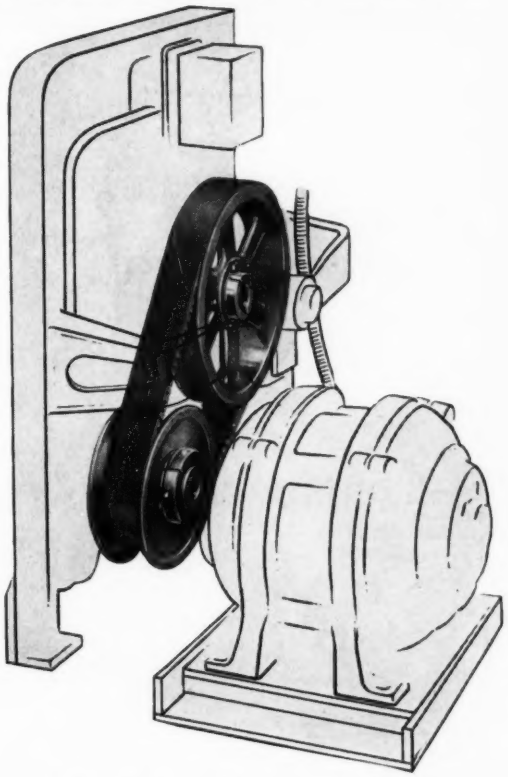

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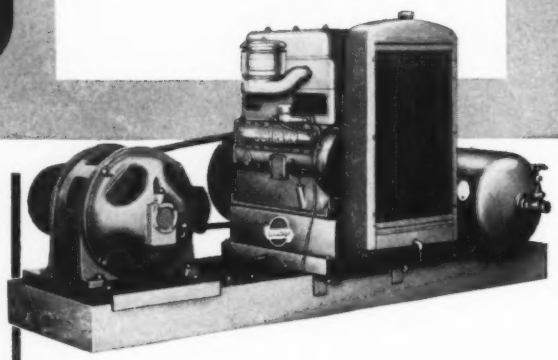

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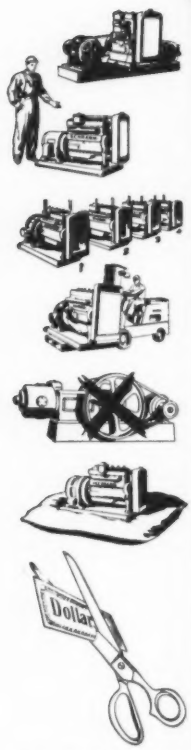

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the synthetic-fiber branch. The A. K. U. concern produced 143-million kgs. of rayon during the year ending in May, 1953. About 7.2-million kgs. of nylon are expected to be produced by the end of 1954.

Cotton-cloth production has now surpassed prewar levels. Although Indonesia has fallen off as the main customer (from 70% Dutch exports in 1938 to 25% in 1952), markets in Europe have been found.

Dutch cotton mills can work at full capacity only if more than one-third of the national output is exported. Several export combines have been formed to strengthen Holland's position in foreign markets. No new important export or import regulations have been made during 1953.

Woolen mills are in a favorable condition, especially the blanket producers. Several wool and cotton plants are modernizing.

Norway

Although import and export regulations on textile goods were abolished in Norway on May 1, 1952, the Norwegian textile industry is showing its capability in competition.

There has been a small reduction in the number of operating mills, but the reduction has been in the form of consolidations to adapt to the new conditions.

The industry has an optimistic view of the future.

Mexico

Except for a few modern mills, the Mexican textile industry is said to be 50 years behind the times. Labor unions have resisted new-machinery installations, and high tariffs have permitted mills to operate inefficiently.

Cotton-cloth consumption has dropped from 17.78 sq. meters per inhabitant in 1946 to 12.36 sq. meters in 1952. This reduction is due to the increasing use of man-made fibers and a trend to modern woolen suits. Rayon and acetate needs are satisfied through two large recently erected plants.

Although the domestic and export market for Mexican cloth dropped 15% during 1953, production dropped only 2%, as mill owners found themselves unable to lay off labor. The warehouses therefore carry a capacity inventory.

Owners say that 32,000 looms should be replaced and could be done in stages with textile-union cooperation. The result of the present-day inefficiency means that a Mexican worker in an old mill earns 7.7 pesos, or 80¢ per day, and has to work two days to buy a shirt.

The modern mills operate successfully and pay their help higher wages.

Pakistan

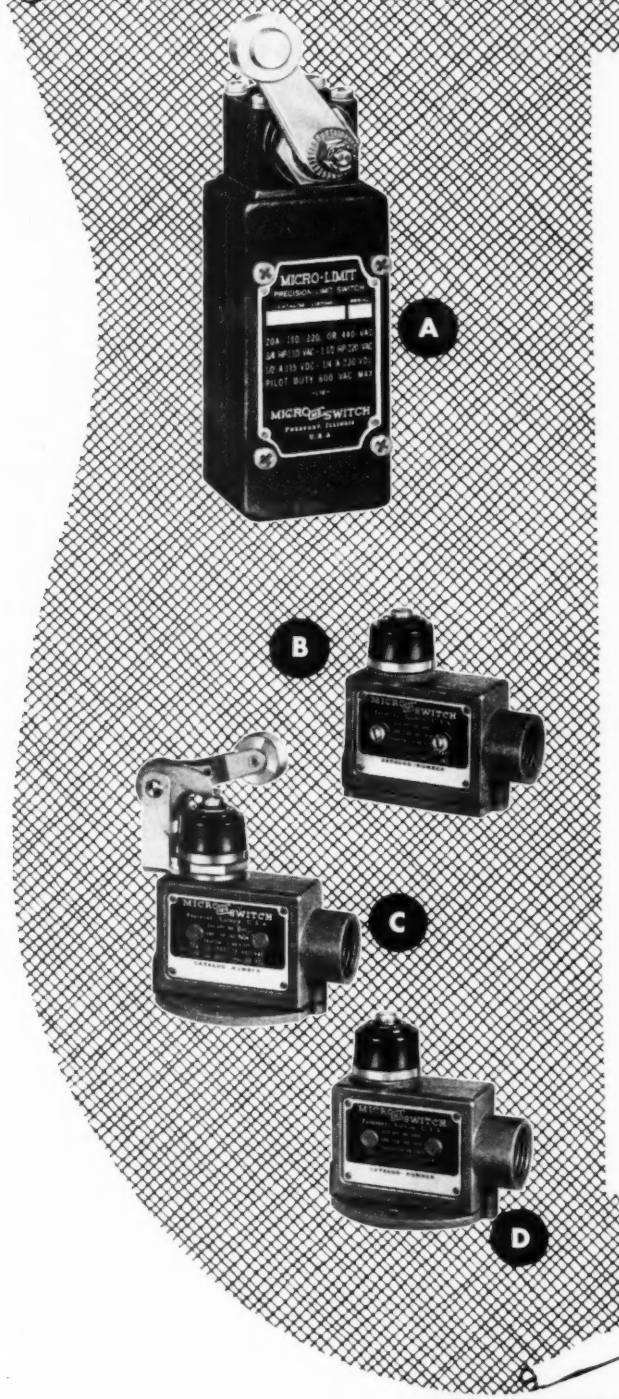
There were 19 cotton mills with 177,000 spindles in operation in Pakistan six years ago. Today, there are 43 mills with 709,000 spindles. It is expected that 90 mills with 1,400,000 spindles will be operating in 1955.

This remarkable trend toward self-sufficiency in textiles is partly due to India's unwillingness to trade with Pakistan.

Two woolen mills, increasing the total to seven mills, will help to supply the 500,000 handlooms in the country. Three rayon spinning-and-weaving mills under construc-

tion will increase the 30-million yds. an-

MICRO Precision Switches



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C Six switches like this assure constant tension of a cloth handling machine. They prevent belt shifting on the cone pulleys, keep the dancer roll within specified limits and modulate motor speed to fit position of dancer roll.

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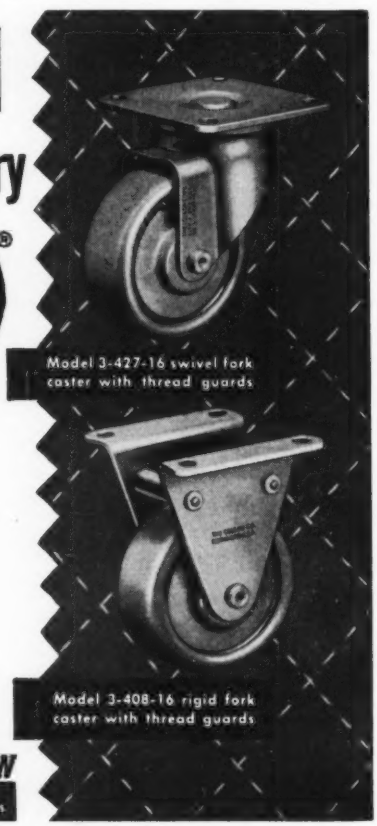

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tion will increase the 50-million yds. annual production of the 33 rayon mills in production.

Peru

Increased import duties have improved the textile picture in Peru. Foreign competition has decreased, but the textile industry wants still higher duties, and it is expected that they will be obtained in 1954. It is estimated that 25% of Peru's cotton textiles, and a larger percentage of woolen goods, are imported.

The woolen industry has expanded since World War II, and quality has improved. Quality materials are still imported, but local mills are improving their equipment. One mill is planning the installation of 50 to 100 looms for weaving fine cotton cloths and mercerized poplins.

Exports are expected to be increased, with Uruguay and Argentina the big customers. Peru's textile industry is larger than any other industry, and it is estimated that it is growing at over 10% per year.

Philippines

To keep out imports and discourage private competitors, the Philippine government has introduced new regulations to keep its government-monopolized cotton textile industry from losing money.

Importers are required to spend 75% of their quotas on rayon imports and only 25% on cotton goods. New regulations mean that only 20% of the textiles imported during 1952 were allowed to be purchased during the second half of 1953. All broad-woven fabrics, except blue denims, were listed as nonessential categories.

The government organization has an annual weaving capacity of 5.5-million yds. of cotton cloth, compared with an average annual consumption of 150-million yds.

Private industry is limited to 14 small knitting mills producing underwear and socks.

The proposed $15-million Rayon Corp. of the Philippines is being held in abeyance until the new government economic policies are made clear.

South Africa

Cotton manufacturers allege severe competition from Japan, and measures are being taken to consider this condition. On January 1, 1954, a new government policy of nondiscrimination against hard currencies was introduced.

Activity has been maintained in most branches of the textile industry. A Sanforized-finishing plant has been established, denim production has commenced, and extensions have been made to spinning and weaving plants.

Spain

1953 production of staple fibers (25-million kgs.) is double last year's production. Rayon production at 12-million kgs. compares with 8-million kgs. in 1952.

This increase is due to doubled output by the domestic cotton growers and modernized equipment. Plans are being made to build a cotton-goods mill at Badajoz with 25,000 spindles and 1,000 automatic looms.

Spain is producing her own machinery. There have been no new import-export

regulations during the year. Although synthetic-fiber production is equal to Spain's requirements, finished-cotton-goods export is favored.

Sweden

During 1953, the Swedish textile industry recovered from the 1952 recession, and production has been running about 10% above 1952. Labor is in short supply, and employment is expected to remain high until well into 1954.

Increased capital spending is planned by knitters and garment makers. Imports are expected to continue at present steady levels. Imports are 50% higher than in 1952. Wool cloth was imported to the value of 130-million Kronor, compared with 77-million Kronor during 1952. Imports of cotton fabric were 103-million Kronor, compared with 72-million Kronor in 1952.

Less textiles are imported from Britain, to the advantage of European countries. Cheap lines are imported from Germany and Holland.

Yugoslavia

Five new spinning mills have been completed in 1953 to balance the disproportion between spinning and weaving. Modern English machinery was used to equip the four cotton mills.

Although public demand for clothing is high, stocks piled up during the year because of the high profits tax imposed on the public-owned mills. A government-ordered price cut of nearly 25% in November caused a rush to buy.

The expanded industry has a surplus capacity estimated at about one-third of domestic production. Export markets are being sought for this surplus in the Eastern Mediterranean areas. The industry is protected against foreign competition by heavy tariffs on imported cloth.

A Japanese firm is supplying equipment for a new $14-million viscose plant that will supply most of the country's rayon needs.

Spring-Needle Jerseys

CONTINUED FROM PAGE 105

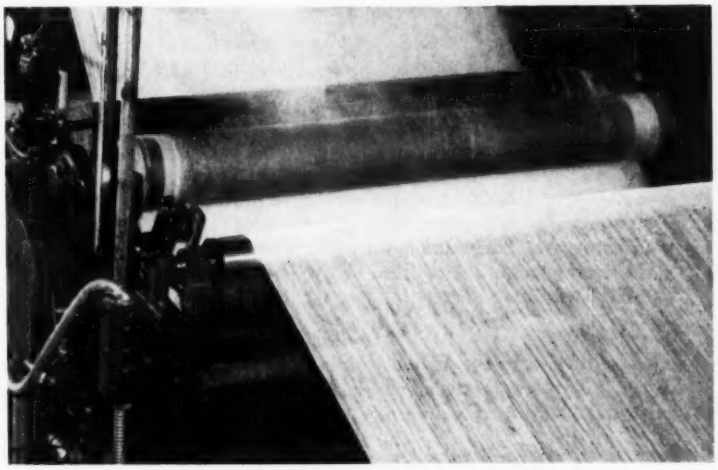
1 to 8 may be high-cut cams, and on feeds 9 to 12 plain cams.

Plush fabrics that can be napped and printed or used as they come from the machine can be made in two ways.

The first method uses a special sinker with two throats and a special thread guide to feed a yarn to each sinker throat. Acetate or cotton yarns can be used to knit the long-sinker-loop pile. An unusual effect is obtained by using dope-dyed acetate yarn for the pile and a different-colored yarn for the jersey base.

The second method produces a longer pile, but production is reduced because two feeds are necessary to knit one course. Long-butt and short-butt needles are arranged alternately around the cylinder. The needle cams are arranged to raise alternate needles at odd feeds and raise all needles at even

COMBINATION QUETSCHES
Make possible sizing of Combination Warps



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To be able to produce modern cloth at competitive prices you need modern equipment.

Leading mills, weaving fabrics that combine two or more natural and synthetic yarns, are installing

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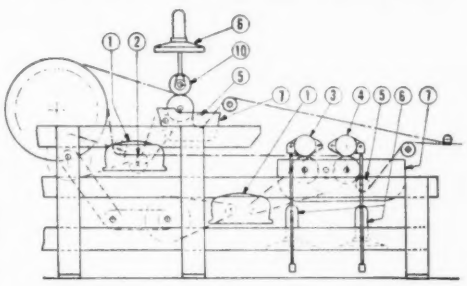
They thus are able to size warps that contain mixed yarns in a single operation, saving time and improving the quality of their cloth.

Johnson makes the following quetsches for utmost versatility in sizing different types of yarns simultaneously: single, double, double-double, single-single, and single-double quetsches.



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5 Adjustable immersion roll.
6 Air motors for pneumatic loading of quetsch pressures.
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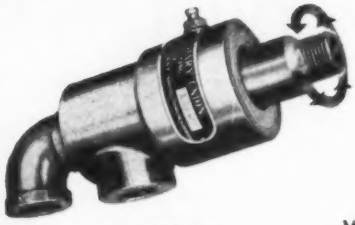

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feeds. The presser cams at odd feeds are taken out of action.

Here is the complete setup:

Feed No. 1—Remove presser cam from action. Raise long-butt needles. Float short-butt needles. Draw loose stitch. Raise needle pull-down cam. Feed pile yarn.

Feed No. 2—Put presser cams in action. Knit on all needles. Draw normal stitch. Feed backing yarn.

Feed No. 3—Remove presser cam from action. Float long-butt needles. Raise short-butt needles. Draw loose stitch. Raise needle pull-down cam. Feed pile yarn.

Feed No. 4—Same as Feed No. 2.

Elastic Fabrics Can Be Made With Nylon Yarn

Elastic swim-suit material can be made by using a similar principle of knitting. Here again dope-dyed yarns can be used to great advantage although the quick-drying powers of nylon and Dacron have a big selling advantage.

Furnishing wheels are needed to feed the rubber correctly. Wheels with 20 teeth are recommended for the nylon or rayon yarns, and 30-tooth wheels for the rubber yarns.

This is a setup for a typical swim-suit fabric from a 28-cut machine:

Feed No. 1—Feed 210-den. nylon plaited on 50s cotton, or 300-den. dope-dyed acetate. Knit all needles. Slacken stitch. Bring back knock-overs. Cut needle pull down.

Feed No. 2—Feed LA3 Laton rubber yarn. Float short-butt needles. Raise long-butt needles. Tighten stitch. Remove presser cam from action.

Feed No. 3—Feed LA 3 Laton rubber yarn. Float long-butt needles. Raise short-butt needles. Tighten stitch. Remove presser cam from action.

Twill Effects Use Tuck and Float Stitches

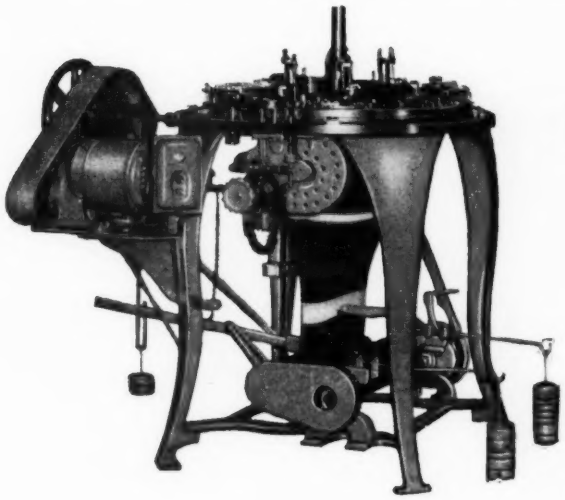
A twill effect that is suitable for brushing but can also be used as it leaves the knitting machine is made by tucking, floating, and using heavy yarn numbers on every third feed. The needles are arranged alternately with long and short butts. The pressers are arranged two high-cut and two low-cut. The presser cams are arranged so that the high-cut pressers are moved toward the needle on the first two feeds and the low-cut pressers are moved on the next two feeds.

Six feeds are necessary for one repeat of the design. Here are the knitting details:

Feed No. 1—Float short-butt needles. Knit long-butt needles.

Feed No. 2—Float long-butt needles. Knit short-butt needles.

EIGHT-ROLL VERTICAL BRUSHER
Showing Exhaust Fan



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Knit Trimming Machine

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- • • Unusual design possibilities
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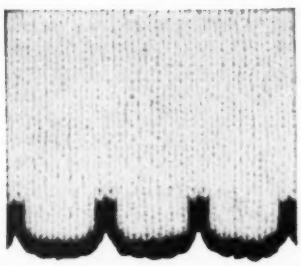

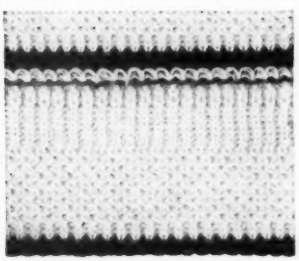

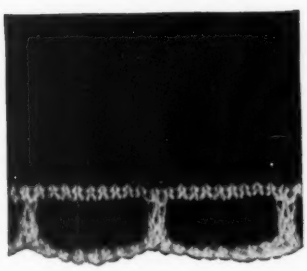

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- • • Can use rubber for elasticity
- • • Perfect for cuffs, collars, bottoms and other knitted trimmings

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MANCHESTER, N.H.

complete in the shipping room the following afternoon.

save steps!

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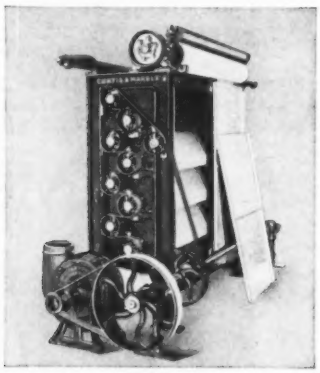
Showing Exhaust Fan



The illustration above shows a Vertical Brushing Machine with eight cleaning rolls, individual dust chutes, hoppers, and exhaust fan. It can be used to give a considerable increase to the brushing capacity of present equipment, and can be run in connection with a Horizontal Brusher.

A recent development in our Vertical Brushing Machines is the quick adjustment for the cleaning rolls. This makes it possible to change almost instantly to light from heavy brushing, or vice versa. This can be applied to either our Six-Roll Brushing Machine, or the Eight-Roll.
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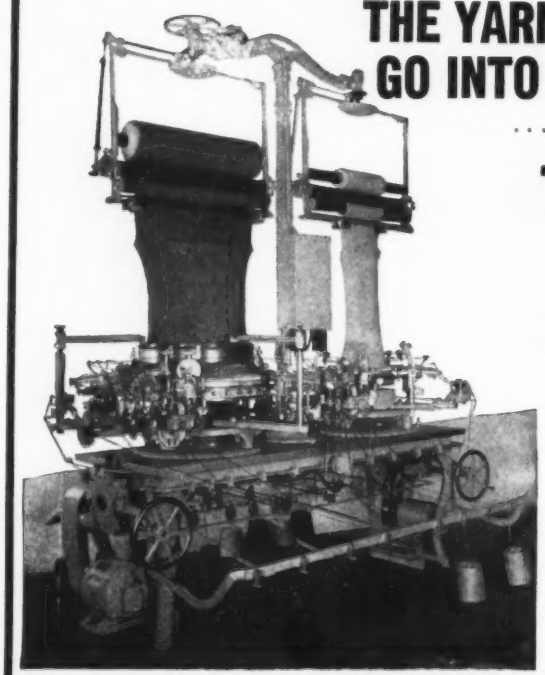

TOMPKINS
D-2

DOUBLE HEAD
SPRING NEEDLE
KNITTING MACHINE

SEE FOR YOURSELF . . . let us show you the Tompkins D-2 in production on whatever yarn or fabric you wish. Want to see samples of finished material? We'll knit up any material you specify — just send us the yarn!

OTHER TOMPKINS MACHINES
BEEF BAG KNITTER **HOCKEY CAP KNITTER** **MULTIPLE FEED KNITTER**

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needles. Knit short-butt needles.

Feed No. 3—Float short-butt needles. Raise long-butt needles. Remove presser cam from action. Tighten stitch 40 points. Feed two ends of 150-den. yarn.

Feed No. 4—Float long-butt needles. Knit short-butt needles.

Feed No. 5—Float short-butt needles. Knit long-butt needles.

Feed No. 6—Raise short-butt needles. Remove presser cam from action. Tighten stitch 40 points. Feed two ends of 150-den. yarn.

By using various arrangements of needles, pressers, presser cams, stitch cams, and yarns, you can obtain many variations of these fabrics and other fabric types.

F.-F. Handling Ideas

CONTINUED FROM PAGE 119

mark. All stockings that fall between these marks are classified as short. Stockings between the yellow line and green mark at 32½ ins. are medium, and the long lengths are from 32¾ to 34½ ins.

To facilitate transferring, a Permaprint head is mounted on the end of a conveyor band. Two girls work as a team and change duties at intervals.

One girl carries the stockings from the pairer and lays 2-doz. lots on the conveyor belt so that the welts will move under the transfer machine. The same girl takes the transferred stockings and places them on tote boards for folding. The second girl operates the Permaprint machine and presses a foot pedal to move an untransferred batch of stockings to the Permaprint head.

Two-Tiered Conveyor Speeds Folding and Boxing

The tote boards are placed on the bottom tier of a two-tiered gravity conveyor with its high part close to the Permaprint head. Folders on both sides of the conveyor remove the goods for folding as they slowly travel down the conveyor.

After being folded, the stockings are placed on the top conveyor, where they travel to the boxing table at the lower end of the conveyor. Three girls handle the stockings at the end of the conveyor. One girl places the folded stockings into boxes and puts the boxes on a counter to be checked against their tickets for color, size, length, style, and packing. The checker passes the boxes to the marker, who stamps the particulars on the boxes.

This continuous flow of goods enables lots up to 50 doz. to move from the gray stock in the morning and be

complete in the shipping room the following afternoon.

This efficient handling system developed at Shannon not only assists in producing good-quality stockings by reducing handling but also eliminates large lots of uncompleted goods lying around the mill.

Pacolet's Weave Room

CONTINUED FROM PAGE 107

points throughout the weave room to insure uniform atmospheric conditions. The instruments are set at 72 dew point.

Temperature of 80° F. is maintained in cold weather with an auxiliary steam unit designed to release steam into the washer-water bath.

Special features of the Carrier system include:

1. An endless-belt strainer on each washer to collect lint into a basket that is easily removed to be cleaned. The action of the strainer results in clean wash water and prevents clogged drains.

2. Small baffle spray pumps mounted so that the baffle plates receive a constant wash spray to prevent collection of lint on the plates.

3. Aluminum air ducts that do not rust or corrode and are easy to keep clean.

A relief damper in the apparatus room keeps weave-room air flowing constantly in one direction. As a result, fresh outside air is always drawn into the washers or is released to the outside.

The washed-air system is cleaned thoroughly once each week, and the water in the bath is changed at the same time. Screens are cleaned as often as they become dirty, usually once each day.

Looms are covered once each week, and the outsides of the ducts are blown down with air.

The insides of the ducts are cleaned once each month. To clean the insides of the ducts, air is blown into the openings, starting at the fan end. Air is blown into each opening until all dirt and lint reach the last opening, and then the dirt is removed.

The Building Fits In With the Air-Control System

Among the many features of special interest of the Pacolet installation is the construction of the building and the maximum utilization offered by the economy of the design.

Walls are 21 ins. thick over-all and consist of two courses of red brick on the outside, one course of hollow tile, 2 ins. of foam glass, and an inside sur-

save steps!
save time!
save headaches!
with

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Allethrolone
Allyl Acetone
Benzalacetone
3-Carbethoxy-4-Hydroxycoumarin
4-Chloro-6-Methoxyquinoline
Citrazinic Acid Tech.
2,5-Dimethyl-1, 5-Hexadiene Tech.
2,5-Dimethyl-2, 4-Hexadiene Tech.
Di-n-Propyl Maleate
Diphenylacetonitrile
Ethyl-3-Oxo-6-Heptenoate
Hemipinic Acid
4-Hydroxycoumarin
Methallyl Acetone
Methylisoamylacetoacetate
N, N' Dibenzylethylenediamine Diacetate
n-Octyl Bromide
n-Octyl Mercaptan
Para-Tolyl Acetic Acid
Phenyl Trimethylammonium Sulfate Solid
Phenyl Trimethylammonium Hydroxide Solution 20-25%
Potassium Methyl Sulfate
Quininic Acid
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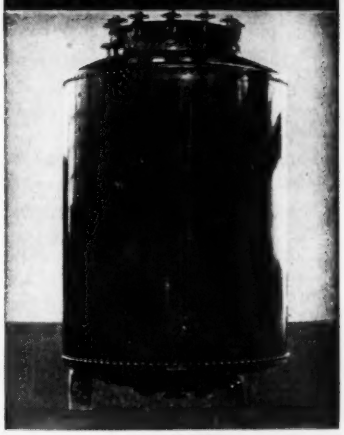
COLE
PRESSURE VESSELS FOR TEXTILE LIQUIDS



• Cole builds vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with monel metal.

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REGENT CONING OIL—
SPINOL RL

give excellent control and lubrication

REGENT CONING OIL —
for Orlon, Dacron, Acrilan, Nylon, and other synthetic filament or spun yarns. Improves uniformity and knitting properties. Also softening agent for after processing.

SPINOL RL—
for Orlon and Dacron fibers and blends. Ideal as stock lubricant prior to spinning and as yarn lubricant before knitting. No adverse effect in dye bath or on shades.

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face of glazed white tile extending the full length of the wall.

The concrete floor has a Kalman finish. Electric conduits are in panel troughs in the floor, and loom connections extend up from the floor to the loom.

The ceiling is concrete-slab construction, and the roof has a tar-and-gravel finish.

Roof trusses are mounted on I-beams with only one row of columns to support them. The 58-ft. I-beam spans extend to the center of the weave room; and since this space is used as a center alley, no obstructions interfere with placing warp beams in the looms or with the employees in their work.

The weave room is lighted by 28 rows of slimline fluorescent fixtures with 14 continuous fixtures in each row. The 392 fixtures each have two 40-w., 96-in. tubes.

The fixtures are suspended from the ceiling, between the trusses, to points below the air-conditioning duct work so that no obstructions throw shadows on the cloth or looms.

Loom beams are handled in the weave room on a two-track American MonoRail system.

Adjoining looms are installed with a 3-in. space between the ends of the lays. The weavers' alleys are 21 ins. wide, and warp-beam alleys are 20 ins. wide.

Books of Interest

3,200 Wool-Blend Samples For Wool and Worsted Spinners

ATLAS OF BLENDS, by Karl Leyerer; Werner Sidler Textile Publishers, Zurich, Switzerland; cloth, 7 volumes. $145 ± (including duty). U. S. Representatives: Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

These seven books contain 3,200 blends of wool for worsted and woolen mills. The blends are grouped by color shades and tints, and the exact mixture percentages are given with reference to a section of 143 pure-color samples. Included are over 500 slub blends in 20 different constructions.

The atlas of blends is the first part of a 40-volume publishing venture that will eventually include atlases of fabrics, fibers, designs, weaves, and solid-color wools.

With this atlas of blends, any new blend can be duplicated by a comparison with the samples, experimental blending can be

eliminated, and cooperation between mills

News about

B. F. Goodrich Chemical *raw materials*

Looking for ways to improve textile products?

Check these *Hycar* Latex advantages

Apply this reference listing of the uses for Hycar latex to your textile products or applications. It may give you helpful ideas—point the way to developing or improving more saleable products. For further information and a fact-filled booklet on Hycar latex, please write Dept. HZ-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

fabrics	Use Hycar Latex—
cotton	....as a permanent warp yarn size to provide abrasion resistance during weaving; and wear resistance to the finished fabric; ....as after-treatment to improve wearing qualities and to provide a full hand; ....as a carrier for specialty active agents such as fungicides and flame proofing chemicals; ....as a binder for waxes and metallic salts used for water repellency or stain resistance.
rayon	....as permanent warp yarn size with starch for increased seam strength.
rayon cotton	....with urea-formaldehyde resin to prevent deterioration of fibers when large amounts of U-F resin are used for crease and wrinkle resistance; ....as a binder for pigment coloring and printing; ....as a binder for non-woven fabrics.
cotton wool	....as after-treatment to reduce crock particularly with red naphthol dyes.

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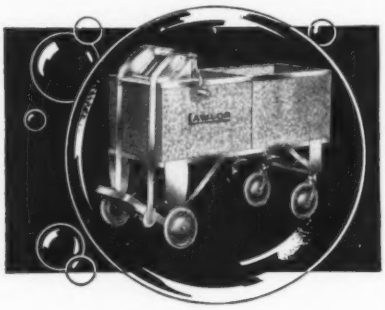
GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

LAWLOR
MOPPING TANKS



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EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together; the foot lever is perfectly balanced.

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EASY to move wringer: self-adjusting front casters raise metal feet from floor when you're ready to go.

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eliminated, and cooperation between mills and sales departments can be improved by using the blends as a code.

Newest Book on Microscopy Has More on Synthetics

FIBER MICROSCOPY, A Textbook and Laboratory Manual, by A. N. J. Heyn; Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y.; cloth, 415 pages, $5.50.

Professor Heyn of Clemson College is a recognized authority in the field of fiber microscopy, and this book proves it. He has a working knowledge of the literature and research and the ability to judge it.

Since this book is a comprehensive treatment, it repeats a lot of elementary techniques, then more advanced treatment.

Because it is the latest work in its field, the manual includes information on the newer synthetics, such as an identification key for blends of the fibers. It provides a well-organized source of information on microscopic techniques, but it still leaves such questions as how much reliance to place on photomicrograph atlases to the experience of the operator.

Mill Maintenance

Vibration Can Injure Your Piping System

Leaks at pipe joints commonly thought to be caused by gasket trouble are often the result of vibration in the piping system.

Let's take a concrete example. A boiler feed line that had been installed only a short time began leaking for the second time. Most of the leaking joints were close to the pumps. The gaskets were of good material and were giving fine service in all other parts of the line. But there were 8 or 10 joints around the pumps that simply would not hold.

All these joints had been remade. Extra care had been taken in pulling up the bolts to be sure they were evenly stressed, but the joints leaked just the same. Naturally, the gaskets were blamed.

Vibration Can Be The Trouble

An experienced representative of the gasket company was called in, and he suggested that the trouble might be due to vibration. To test his theory, he placed a glass of water on the edge of a flange near the pumps. Violent ripples immediately disturbed the surface of the water.

In a few seconds, the ripples slowed down, and finally the surface of the

. . . especially for continuous bleaching. Its extra alkalinity reduces the need for additional caustic in the J-Box. Exceptionally pure, clear Starso releases oxygen evenly and lessens J-Box deposits.

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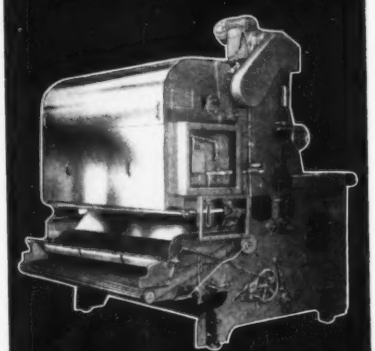

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water became smooth. The water was quiet for a second or two, and then the ripples began to reappear. They rose to another peak of agitation and again disappeared. They went through this cycle repeatedly.

The presence of these ripples indicated vibration of a special kind; the type of vibration that usually occurs would have caused even and steady ripples on the water. This particular type of vibration indicated cantilever vibration (in the case, a pipe supported at only one side). The boiler feed line was followed toward the pumps; and about 50 ft. from the pumps, a horizontal header was making a long, sweeping bend with about an 8-ft. radius. The line was supported at two points, each about 16 ft. from the imaginary corner line of the radius. The bend formed a perfect cantilever.

Vibration Isn't Always Visible

The feedwater line was a 4-in. pipe carrying hot water at about 10 ft. per sec. Centrifugal pumps delivered the water, and there was no noticeable vibration in the line. There was, however, an actual high rate of vibration caused by the pump's rotary impellers that was not audible.

The water in the pipe went into a spiral motion in going around the bend and didn't straighten out until it got well beyond the hanger nearest the leaking joints.

Flowing water seldom creates a definite audible note (called a resonance), but the flow of steam or air often does. While a whole pipe structure is in a state of vibration, this motion is not usually destructive. But when a concentration of movement occurs at a local point, such as at our bend, the effect of vibration is transmitted to some other part of the system and becomes dangerous.

The cause of the trouble appeared to be at the curve in the line; and to test the theory, a rope was thrown over the center of the bend and a weight hung on the end of it. The ripples in the glass of water stopped.

Find the Vibration Point

Then another hanger was added at the curve to permanently break up the cantilever action. The hanger corrected the trouble. The same results could possibly have been produced by moving one of the other hangers. The third hanger was added to help support the water-filled pipe.

Vibration is certainly a trouble maker. Anytime you find trouble in a piping system that lacks a sensible explanation, vibration is likely the cause. The trick is to trace the trouble to the cause of the movement; then it's easily fixed. Crane Co.

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YOUR OWN TESTS
will prove their unsurpassed performance

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SMM Roller-Bearing Spindles
for more uniform yarn
with greater economy
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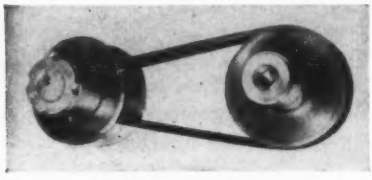
ICOR Variable-Speed Pulleys
(Speed Ratio up 1:17—½—25 hp)
for better use and control of production capacity with unlimited flexibility in operation & application



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Textile Equipment News

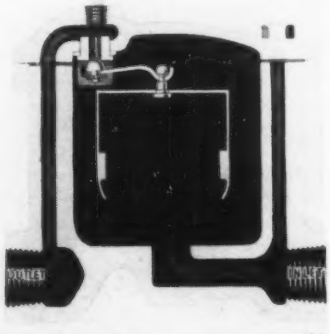
CONTINUED FROM PAGE 150

Safety Glasses

SAFETY GLASSES protect the eyes against flying particles and glare in maintenance work. These glasses, made by Watchemoket Optical Co., 232 W. Exchange St., Providence, R. I., are made of shatterproof lenses and side visors. Lenses are optically correct and come in light, medium, or dark green.

Circle T-24 on Reader-Service Card

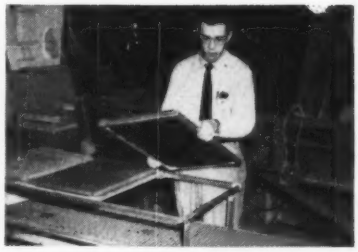
High-Priced Feature in Low-Priced Steam Traps



DUO-STEP LEVERAGE, formerly a feature of the larger-sized steam traps made by Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio, is now available in the low-priced models designed for pressures up to 200 psi. and temperatures up to 400° F. Working on the double-fulcrum principle, Duo-Step Leverage is said to double the drainage capacity of an inverted bucket trap.

Circle T-25 on Reader-Service Card

Radiant Panels Need No Insulation



RADIANT-HEATING PANEL for industrial applications is in production at Corning Glass Works, Corning, N. Y. Applications

AT YOUR SERVICE

SPECIALIZED ENGINEERING

SPECIALIZED EXPERIENCE

SPECIALIZED MACHINERY FOR TWISTING BUNCHING STRANDING FORMING AND LAYING IN THE TEXTILE • WIRE CORDAGE AND MANY OTHER INDUSTRIES

WRITE TODAY. YOUR INQUIRY WILL GET PROMPT ATTENTION

HASKELL-DAWES MACHINE CO., INC.

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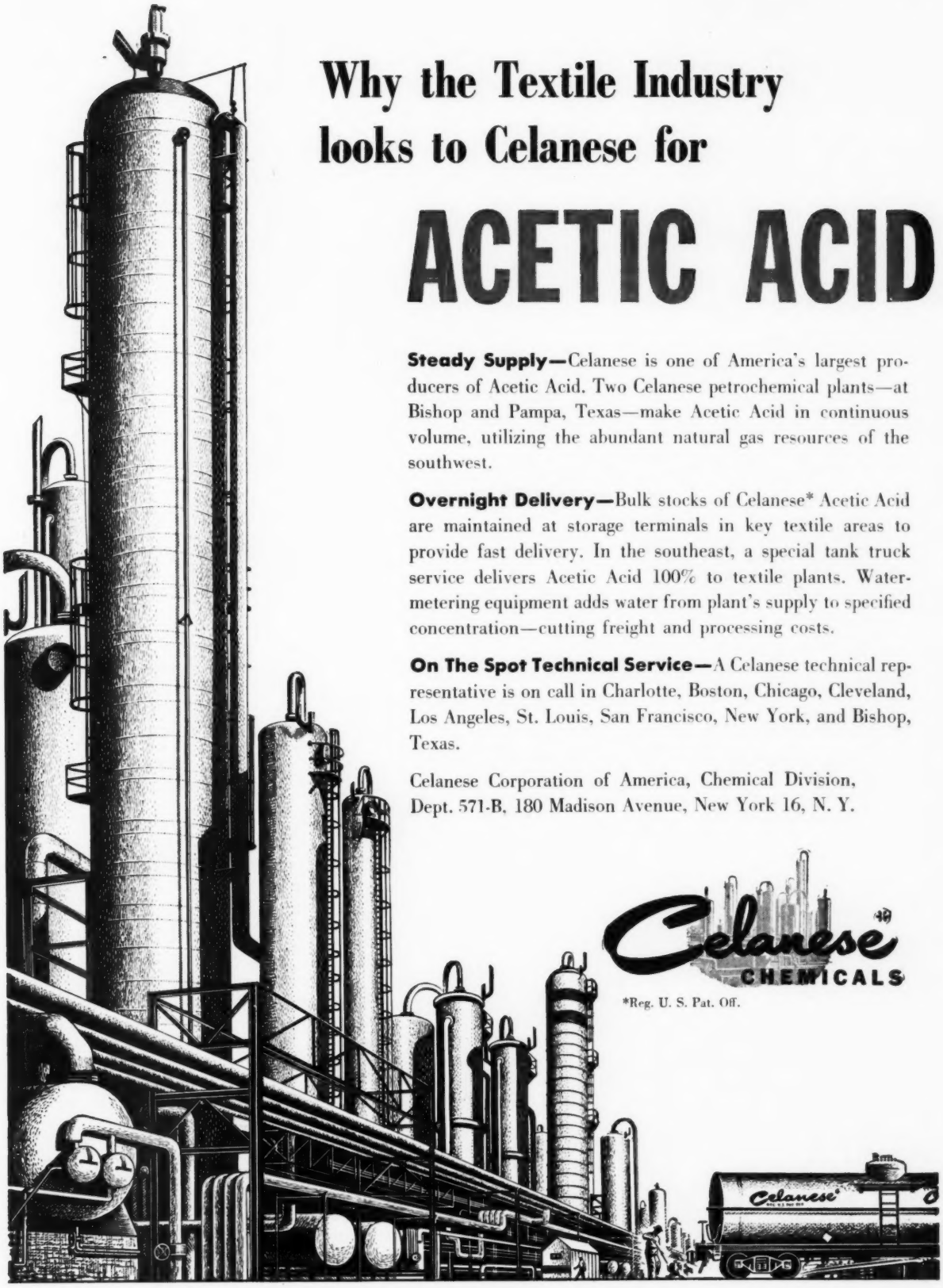
PHILADELPHIA 34
PA.



Why the Textile Industry looks to Celanese for

ACETIC ACID

Steady Supply—Celanese is one of America's largest producers of Acetic Acid. Two Celanese petrochemical plants—at Bishop and Pampa, Texas—make Acetic Acid in continuous volume, utilizing the abundant natural gas resources of the southwest.

Overnight Delivery—Bulk stocks of Celanese* Acetic Acid are maintained at storage terminals in key textile areas to provide fast delivery. In the southeast, a special tank truck service delivers Acetic Acid 100% to textile plants. Water-metering equipment adds water from plant's supply to specified concentration—cutting freight and processing costs.

On The Spot Technical Service—A Celanese technical representative is on call in Charlotte, Boston, Chicago, Cleveland, Los Angeles, St. Louis, San Francisco, New York, and Bishop, Texas.

Celanese Corporation of America, Chemical Division,
Dept. 571-B, 180 Madison Avenue, New York 16, N. Y.

Celanese® CHEMICALS

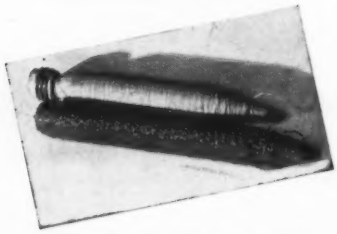
*Reg. U. S. Pat. Off.

CHECK YARN TENSION
with the new Trigger
SAXL TENSION METER
Quickly—Correctly In Small Space

METERS FOR ALL TENSIONS
TENSION CONTROLS

TENSITRON, INC.
HARVARD, MASSACHUSETTS
TELEPHONE HARVARD 43

Weave Away your Cares with LAZENBY WINDERS!



Weave mills that require paper filling, cotton filling, rayon filling, asbestos filling or any type filling—LAZENBY has the winders to fit your needs. Send us a small supply of your yarn and we'll wind and return with Test Wind Report and Catalogue.

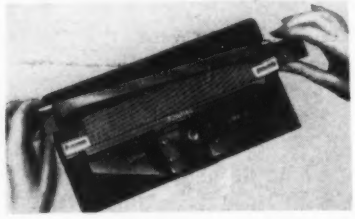
Remember to watch for early announcement of revolutionary developments in Lazenby cop winder.

THE F. A. LAZENBY CO.
3106 Elm Avenue
Baltimore 11, Maryland

are drying silk-screen and printed textiles and for curing resin-coated fabrics. The panels operate up to 660° F. They are sheets of glass covered with electrically conductive film. No additional insulation is required; the panels don't glow; heat distribution is uniform; and less than three inches of clearance are needed. Standard sizes, all 1¾ ins. thick: 13½x13½-in. panels in 500, 1,000, and 1,500 watts; 17½x25½-in. panels in 1,000, 1,500, 2,000, 2,500 and 3,500 watts.

Circle T-26 on Reader-Service Card

Labor-Saving Device for Knitters



NEEDLE-FEEDING DEVICE eliminates the hand feeding of knitting needles into the needle bar. The set of needles for a bar comes mounted on a strip, which is placed in this device, and all needles are then placed in the bar simultaneously. The device is said to be simple and foolproof and to save time and work. It is made by Schumaker Metallwerke and handled in the U. S. by American Laubscher Corp., 333 W. 52nd St., New York 19, N. Y.

Circle T-27 on Reader-Service Card

Materials-Handling System Features Truck, Boxes, Rack

INTEGRATED MATERIALS-HANDLING SYSTEM includes welded-steel load boxes, racks for holding the boxes, and a fork truck for stacking. The system is manufactured by Market Forge Co., 35 Garvey St., Boston 49, Mass. The racks hold five boxes, and the truck handles 2,000 lbs. and has small overall dimensions: 31x51½ ins.

Circle T-28 on Reader-Service Card

See Better! Work Better!

LUXO LAMP
—Acclaimed the World over as the best light to work under!

CONSUMERS: Ask for LUXO LAMP at your nearest dealer's
DEALERS & JOBBERS Line up with LUXO LAMP. Write Today!
REPRESENTATIVES Write to Territories still open

LUXO LAMP CORPORATION
TUCKAHOE, NEW YORK

Static!

It's costly and wasteful. The SIMCO "*Midget*" Static Eliminator is the least expensive, most effective neutralizer available. Equip your machinery now!

the SIMCO company
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Get at it today — consult Stewart about full protection for your property. In addition to surrounding your plant with a Stewart Non-Climbable Chain Link Wire Fence, you may need window guards, skylight guards, steel folding gates, wire mesh partitions and other protective products. Get the whole story in Stewart literature. Write for it today.

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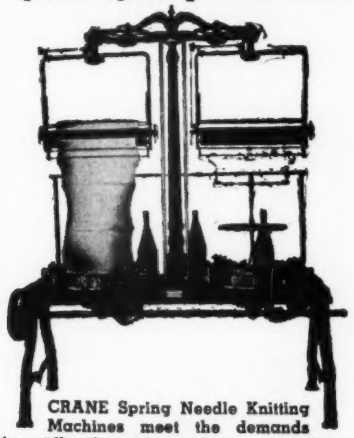
2110 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES

1870 CRANE 1954

SPRING NEEDLE KNITTING MACHINES

Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

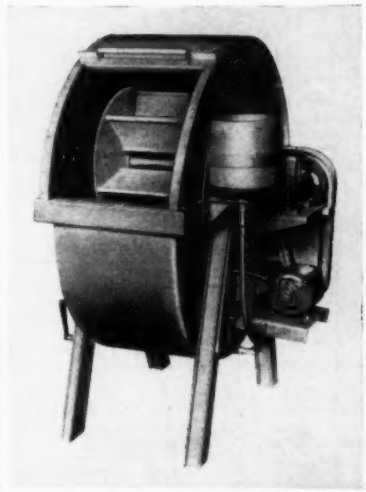
CRANE
MANUFACTURING CO.
LAKEPORT, N. H.

Automatic Speed Control Uses Pneumatic Element

AUTOMATIC SPEED CONTROL of motors by pressure, temperature, speed, or liquid level is now possible through a recent development of U. S. Electrical Motors, Inc., Terminal Annex, Los Angeles 54, Calif. An improved pneumatic control called Varitrol, operated manually or automatically, has been designed into the U. S. variable-speed motor. It is available in horsepowers from 1 to 50. It operates on 60- to 100-psi. air pressure. An approximately straight-line relationship exists between the signal pressure and the speed.

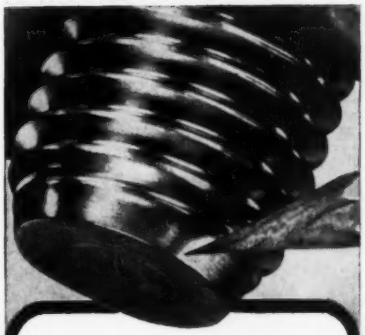
Circle T-29 on Reader-Service Card

Small-Lot Dyeing Machine



SMALL-CAPACITY PADDLE-WHEEL MACHINE is a companion model to the paddle-wheel dyeing machine recently announced by Klauder Weldon Giles Machine Co., Adams Ave. at Leiper St., Philadelphia 24, Pa. It is suitable for special-lot dyeing and laboratory work.

Circle T-30 on Reader-Service Card



TOUGHER!

Allen

LEADER POINT CAP SCREWS

Dropping, knocking against metal surfaces and faulty line-up are major causes of damaged threads. Allen's new unthreaded leader point substantially reduces the causes of screw thread injury, or damage to threaded holes. Grip Heads, precision fit sockets that adhere to the key, *plus* the new leader points, make Allens the world's easiest starting cap screws, particularly in inaccessible spots. Sold *only* thru leading Industrial Distributors.

ALLEN
MANUFACTURING COMPANY
Hartford 2, Connecticut, U.S.A.
ALLEN HEAD

ROLL UP YOUR PRODUCTION EFFICIENCY

DANDUX STANDARD TRUCKS AND ELEVATED TRUCKS

DANDUX CANVAS BASKETS AND SHIPPING HAMPERS

DANDUX SHIPPING BAGS
(square, round or flat)

DANDUX

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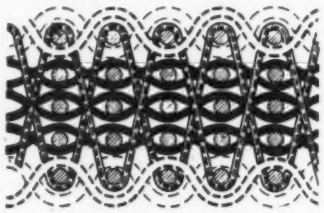
75 West St., New York 6, N. Y.
25 Huntington Ave., Boston 16, Mass.
121 E. Third St., Charlotte 2, N. C.

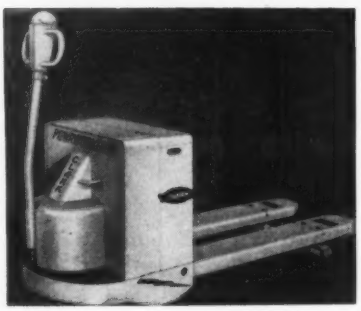
Nylon Bears Belt Stress



NYLON TRANSMISSION BELT is woven of prestressed nylon yarn to bear the stress and cotton yarns for a cover. The belt, made by Lewis & Taylor Ltd., London S.W. 1, England, is said to be ideally suited to power transmission because of its great tensile strength and immunity to microbiological attack. The cotton cover provides driving friction.

Circle T-32 on Reader-Service Card

Powered Hand Truck Has 26-In. Body, 48-In. Load



POWERED HAND TRUCK is only 26 ins. longer than the load carried. Made by Clark Equipment Co., Buchanan, Mich., the truck is available in pallet or platform models with 4,000- and 6,000-lb. capacities, and telescopic tilting fork trucks in 1,500- 2,000-, 2,500-, and 3,000-lb. capacities. Load length is 48 ins.

Circle T-31 on Reader-Service Card

"These rubber doors would go well in my garage—the wife is learning to drive."

Call **MILTON** *for dependable* **BEAMS**

Light Metal featuring continuous welded construction

NYLON & RUBBER YARN BEAMS

FORGED HEADS
RIGID BARRELS

Forged heat-treated aluminum alloy heads and extra heavy wall barrels designed to withstand extreme pressures of monofilament; fine denier; low-turn nylon; and rubber yarns. 13¾" and 21" diameter heads.

SECTION BEAMS

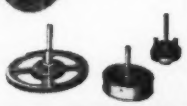
Adaptable to all makes of warpers. Cast aluminum alloy heads and extruded aluminum barrels cannot shrink, swell, splinter or distort.

STEEL BARREL
WARP BEAMS
for BROAD, NARROW FABRIC, RIBBON, VELVET AND CARPET LOOMS

BROADLOOM BEAMS

for C & K and Draper Looms

Shown above is Milton's stud construction (also made with cast iron hubs).



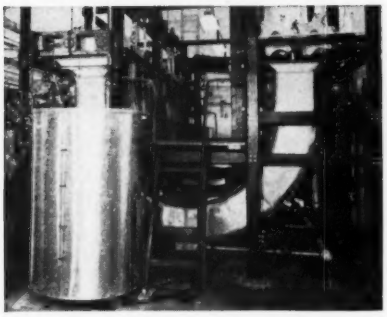
RIBBON LOOM BEAMS

Adjustable head with fixed shaft, or fixed head with removable shaft.

WRITE FOR FREE BULLETINS

MILTON MACHINE WORKS
INCORPORATED
DESIGNERS • ENGINEERS • MANUFACTURERS
MILTON • PENNA.

HERE'S THE COMBINATION
for Profitable Bleaching



The "Junior" unit—typical of the efficient systems which have modernized bleaching.

DU PONT CONTINUOUS SYSTEMS

Speedy, economical, continuous peroxide bleaching systems for production of high quality work in large and small mills. Capacities range from 500 to 7,500 lbs./hr. Each system is easily adapted to suit requirements.

ALBONE® HYDROGEN PEROXIDE

A stable, uniform product of high purity. Available quickly from stocks in principal cities. Shipped in drums or tank trucks and tank cars for plant storage systems.

The complete bleaching service includes operating manuals, bleaching surveys and specific confidential reports for individual operations or mills.

DU PONT TECHNICAL SERVICE

Bleaching specialists located in important textile centers can give prompt advice and expert assistance—recommendations which can help you operate your bleaching process efficiently and economically.

SEND FOR FREE ILLUSTRATED BOOK about Continuous Bleaching. It describes typical installations in leading mills and all phases of the process. Just fill out and mail the coupon below for your copy.

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. . . THROUGH CHEMISTRY

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Electrochemicals Department, Wilmington 98, Del.

Please send me more information about Du Pont Continuous Peroxide Bleaching Systems—including your free book.

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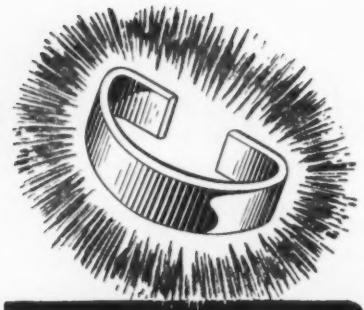


DARY
Ring Travelers

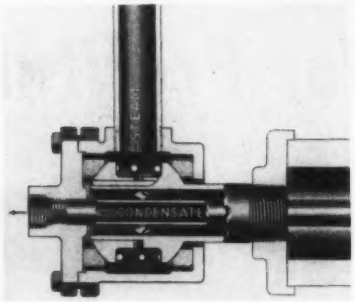
A WELCOME RING

Dary Ring Travelers . . . these words have a welcome ring to millmen throughout the textile industry. For many, many years Dary has meant dependable spinning and twisting performance, however difficult the assignment.

The next time your Dary representative calls, welcome him, for he carries a wealth of experience and offers the finest quality travelers available anywhere.

THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY I. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S. C.

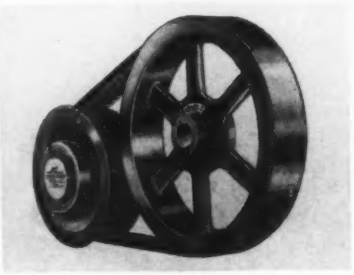
Johnson Improves Its Joint



TYPE J. JOHNSON JOINT is said to have four advantages over the previous models: less weight, smaller size, lower price, and longer life. The joint is made by Johnson Corp., Three Rivers, Mich., for admitting steam or fluids into the rotating rolls and cylinders of textile machines. Flow types (a joint at each end) and syphon types (inlet and outlet in same joint) are available.

Circle T-33 on Reader-Service Card

New Variable-Speed Drive Has Variable-Pitch Sheave



VARIABLE V-BELT DRIVE with a 3 to 1 ratio, available from 5 to 20 hp., has been announced by T. B. Wood's Sons Co., Chambersburg, Pa. A typical textile application of the drive is on spinning frames. The variable-pitch sheave has only two moving parts and features positive-locking collar screws that can't be overtightened. A single wide belt gives maximum efficiency. No lubrication is necessary. Other features: adjustable at either end; little shaft overhang.

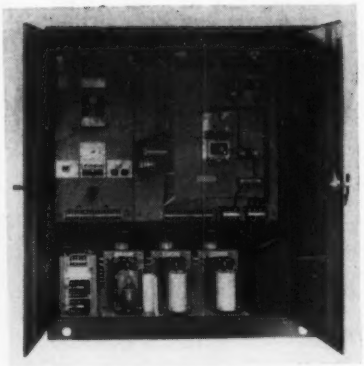
Circle T-34 on Reader-Service Card

Rectifier Power Drive for Adjustable-Speed Service

A new mercury-arc-rectifier variable-voltage power drive has been developed by Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland, Ohio. The drive uses a new single-anode mercury-pool rectifier tube known as Xatron.

The first sizes available provide a.c. to d.c. power conversion suitable for 30-, 40-, and 50-hp. drives.

The unit consists of: the operator's control station, the adjustable-speed drive motor, and the control unit.



ADJUSTABLE-SPEED DRIVE uses a mercury-arc rectifier to convert a.c. to d.c. power. Units are available for 30-, 40-, and 50-hp. service.

Speed is regulated at desired rates of acceleration from the output of the individually driven machine. Regulation is within 5% at all speeds. For continuous operation at low speeds, the drive motor requires continuous ventilation.

Operational advantages are said to be wide speed ranges, smooth and powerful starting, stepless acceleration, close speed regulation, fast response, high overload capacity, centralized control power applied directly, quiet operation, savings in floor space, installation economy, and minimum maintenance.

Four optional features are available: (1) a dynamic braking circuit; (2) magnetic control for reversing; (3) jogging, inching, creeping; and (4) a multimotor synchronized drive.

Circle T-35 on Reader-Service Card

Moisture Meter Gives Quick Reading

PORTABLE MOISTURE METER gives a quick, accurate measurement of the surface moisture in fibrous materials. The Olivo meter is available from Heyl & Patterson, Pittsburgh, Pa. It takes 2 mins. to make a test. Accuracy: 2%.

Circle T-36 on Reader-Service Card

The many sections of SOLVAY'S Industry-Wise TECHNICAL SERVICE *are always ready to help you!*

SOLVAY has a Technical Service Staff of engineers, chemists and technicians *specifically trained for individual industries!* They are available at all times—to assist you with your problems—AT NO COST OR OBLIGATION!

THESE TOP-NOTCH CONSULTANTS are ready to cooperate with you—in the development of a new or improved process for your particular situation . . . suggest better methods of handling, storing and using industrial alkalies . . . and furnish complete details on all SOLVAY products.

THESE SERVICES INCLUDE: SOLVAY'S *field service* . . . SOLVAY'S *laboratory service* (with the best alkali research facilities in the world) . . . and SOLVAY'S extensive series of *technical bulletins.*

EACH SEPARATE SECTION is prepared to work with you on your individual problems—*in complete confidence.* Among these sections are: glass, paper, textiles, ceramics, water and industrial waste, dairies and laundries, concrete, highway construction and maintenance.

. . . So today—why not 'phone or write your nearest SOLVAY office for further information?

SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
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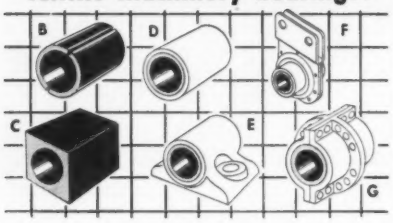
SOLVAY

Soda Ash • Sodium Bicarbonate
Caustic Soda • Caustic Potash
Potassium Carbonate • Chlorine
Sodium Nitrite • Ammonium Chloride
Ammonium Bicarbonate • Cleaning
Compounds • Snowflake® Crystals
Calcium Chloride • Para-dichlorobenzene
Ortho-dichlorobenzene • Monochlorobenzene

GRAPHALLOY
BUSHINGS
OPERATE DRY or SUBMERGED

The IDEAL textile machinery bearings!



...self lubricating
...contain NO OIL

The GRAPHALLOY process was patented 40 years ago and the name GRAPHALLOY has been our copyrighted trademark since that time. While this company has been selling GRAPHALLOY for the past 40 years, recent developments have added materially to its properties.

... use GRAPHALLOY BUSHINGS for TROUBLE-FREE OPERATION in the following TEXTILE equipment!

BLEACHING	DYEING	NEUTRALIZING	SOAPING
CARBONIZING	EXPANDING	PICKING	SPINNING
CONDITIONING	FINISHING	PRESSING	STEEPING
CRABBING	FULLING	SCOURING	WASHING
DECATING	GYRATING	SINGEING	WEAVING
DRYING	MERCERIZING	SLASHING	WINDING

GRAPHALLOY BUSHINGS cut TEXTILE manufacturing costs in these ways:

- ELIMINATE OIL and OILING SCHEDULES
- PREVENT OIL AND GREASE SPOTS ON FABRICS
- AVOID WEAR ON SHAFT AND BUSHING FROM LINT AND DUST GATHERED BY OIL FILM
- OPERATE WITHOUT ATTENTION IN "INACCESSIBLE" LOCATIONS
- REDUCE FIRE HAZARD
- HAVE LONG LIFE
- EXCEL WHEN SUBMERGED . . AS IN WASHING, BLEACHING, DYEING, CARBONIZING
- WITHSTAND HIGH TEMPERATURE (to 700°F) AS IN DRYERS, OVENS, MANGLES, and in ROTARY STEAM JOINTS

Use our 40 years of bearing experience

GRAPHITE METALLIZING CORPORATION
1091 Nepperhan Ave. • YONKERS, NEW YORK

Please send GRAPHALLOY BUSHING literature and Inquiry Form 107A

NAME & TITLE
COMPANY
STREET
CITY ZONE STATE

News OF THE MONTH

TEXTILE RESEARCH FIGURES

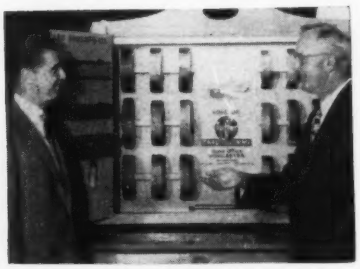
A government survey has turned up some interesting data on research organizations and expenditures by the textile industry. In 1951, the textile and apparel industries spent $15,817,000 on research and development work, or 0.9% of its sales volume. The sales percentage for all industry was 2% that year. Mills had 0.5 researchers per 100 employees and 1.6 supporting worker per researcher. The figures for all industry: 1.5 researchers and 1.5 supporting workers.

QMC TEXTILE REPORTS

For a dime, you can order *Bibliography of Quartermaster Corps Textile Series Reports* from the Office of Technical Service, Dept. of Commerce, Washington 25, D. C. The bibliography is a list of reports on textile research by the Quartermaster Corps.

INFORMAL POINT FOUR

Mac Thal, president of Alamac Knitting Mills, Inc., New York, N. Y., and Indian Orchard, Mass., recently signed an agreement to select the machinery, train the key personnel, and supply the fabric designs for an integrated cotton knitting mill and dye plant being built by Pablo Floro & Sons in the Philippines. The fabrics will bear Alamac-fabric labels, but the cloth will be sold only in the Philippines.



TEXTILE SCHOOL EXHIBIT

CARD-CLOTHING EXHIBIT is presented to Lowell Technological Institute by Harry C. Coley (right), president of Howard Bros. Mfg. Co. President Martin J. Lydon of Lowell accepts. Presentations have been made or are planned for the other textile schools.

TEXTURED YARN PATENTED

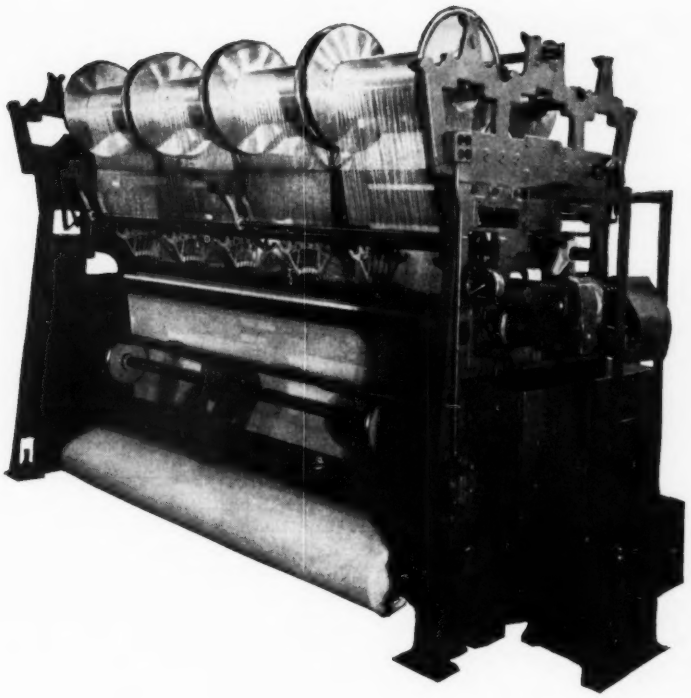
Alexander Smith, Inc., has been granted a patent on its process for making textured yarn, which is used to create sculptured and textured effects in carpets and rugs. Contracts for licensing the process became effective on Dec. 15.

NORTH CAROLINA DIRECTORY

The 1954 supplement to the *North Carolina Directory of Manufacturing Firms* has been published. The 28-page supplement lists 600 new firms that started business since the 1952 directory was compiled. It is mailed free to people who purchased the 1952 directory.

TRI TRUSTEES

BOARD OF TRUSTEES of the Textile Research Institute recently met, and 16 new trustees were elected. Trustees present: Back Row: Blumenthal, Charch, Kropf, Brant, Harris, Pickard, Fowler, and Fitzgerald. Center Row: Alford (secretary), Hayward, Heard, Wells, Labarthe, Tenney, Ashcroft, and Nutter. Front Row: Powers (treasurer), Goldberg (retiring vice president), Sellers, Howe (president), Karl, Davis, and Murphy.

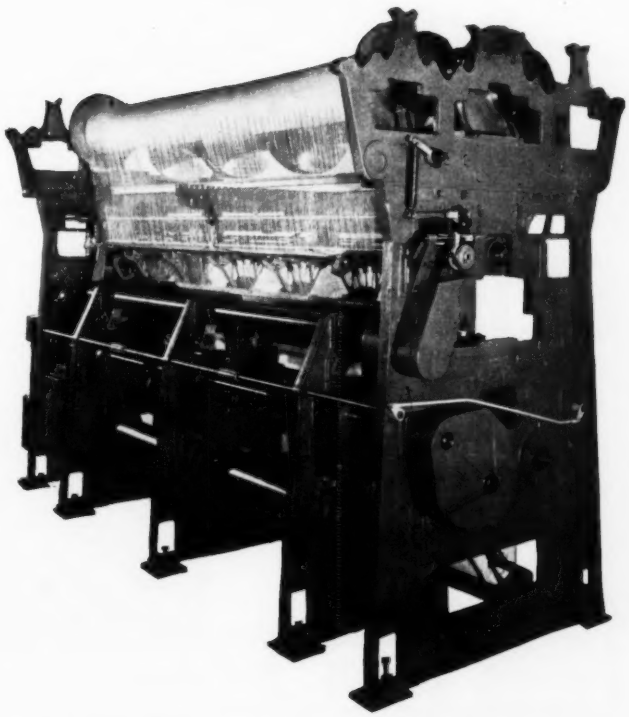


40 to 50% Faster!

NEW Model "E" KIDDE KNITTER

PRODUCTION speeds up to 500 courses with 2 guide bars... up to 400 courses with 4 guide bars can be maintained 24 hours a day with the new MODEL E KIDDE KNITTER. Consider what these new speeds will mean to your costs on elastic fabrics, tulle, shoe fabrics, etc.... what they will mean to your profits too!

A completely new machine, the MODEL E is equipped with high speed cams, totally enclosed and running in oil... double the usual number of guide bar rocker cams... pattern wheels or chain drum... quick stop... and practically non-breakable needles—all features never found in a Raschel machine before. Investigate how this machine can slash your knitting costs! Write for information.

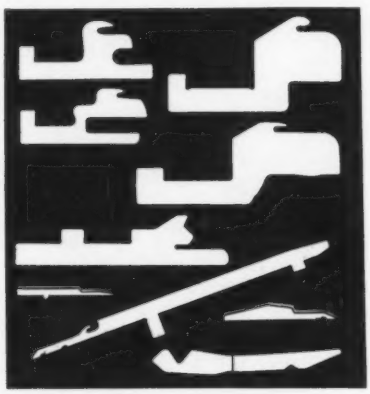


Kidde Knitter

The word "Kidde" is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

WANT TO KNIT FINER FABRICS AT LESS COST?



THE ANSWER:

IVES SINKERS AND SLIDERS

Ives products also include all shapes and gauges of Jacks and Transfer Points or Quills for circular hosiery machines and all gauges of Guides, Sinkers and Sley Points for Tricot and Raschel machines.

THE LOYAL T. IVES COMPANY, INC.
Est 1872
NEW BRUNSWICK, N. J.

WOOL-STAPLE CLASSIFICATIONS

The U. S. Department of Agriculture has suggested that wool be classified by staple length in inches. The classification in inches, it is believed, would provide a more-accurate guide to staple length for both producers and buyers. After discussion and possible revision, the new length classes may be included in the official grade standards. The suggested classification, based on unstretched staple length:

Commercial length class	Suggested staple length					
	Fine (ins.)	1/2-blood (ins.)	3/8-blood (ins.)	1/4-blood (ins.)	Low 1/4-blood (ins.)	Common (ins.)
Staple	2.5 and longer	3.0 and longer	3.5 and longer	4.0 and longer	4.5 and longer	5.0 and longer
Good French combing	2.0	2.5	3.0	3.5	—	—
Avg. French	1.5	2.0	2.0	2.5	—	—
Short French	1.0	1.5	—	—	—	—
Clothing and stubby	Under 1.0	Under 1.5	Under 2.0	Under 2.5	Under 4.5	Under 5.0

WOOLEN MILL REORGANIZES

American Woolen Co. is planning to dispose of 11 mills. Only two of these mills have been operating and these will be shut down. That will leave American Woolen with 14 mills and 1,584 looms, if all 2,208 looms in the other 11 mills are disposed of.

NEWS ABOUT FIBERS

► Dull nylon yarn is in full production at Du Pont. It will sell at a 10¢ premium over semidull nylon, and it is available in 30-, 40-, 59-, and 70-den. weights.

► The recommended percentage of Fibrolane, Courtauld's regenerated protein fiber, is reported to be up to 43⅓% in blends with rayon and up to 50% in blends with wool.

► Knitted winter underwear for women and children is being made of blends of Dynel and combed cotton. Blends of 50%-50% and 25% Dynel and 75% cotton are being used. About 15 knitting mills are making the fabric.

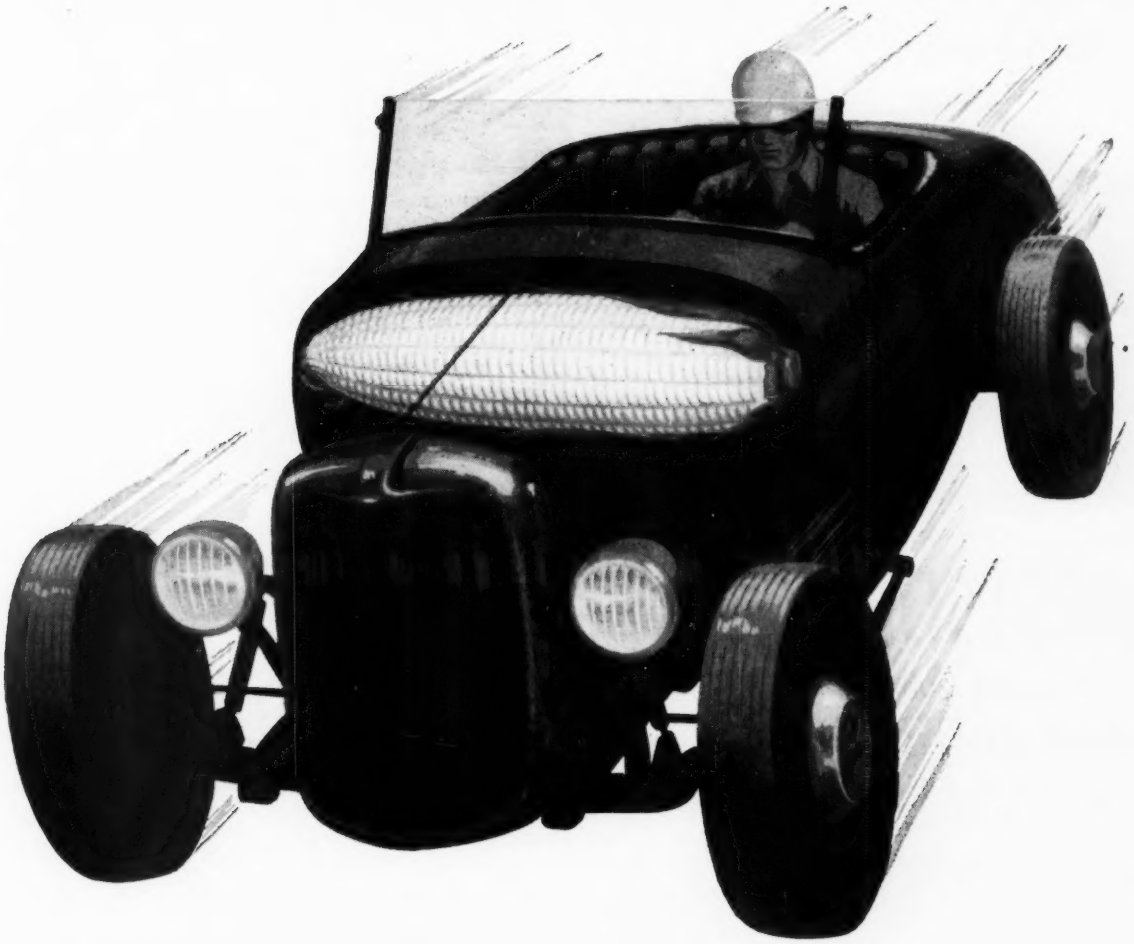
► The dope-dyed rayon staple made by Courtaulds, Ltd., has been given the name of Coloray.

► Dope-dyed rayon filament yarn is being produced by American Enka Corp. Twelve colors are being made

RESEARCH ON CANVAS

THIS EQUIPMENT at Southern Regional Research Laboratory, New Orleans, tests the degradation of cotton fabrics after exposure to weather. W. Norbert Berard (right), chemical technologist, explains the method to members of the National Canvas Goods Manufacturers Association, which recently established a fellowship at SRRL for this work.

what's **corn** doing hitting "70" down the pike?



CORN PERFORMS VITAL FUNCTIONS... IN MANY UNEXPECTED PLACES

Under the hood of your car for instance...derivatives of corn were used in casting the cylinder heads... also in extracting (from its oxide, alumina) the aluminum used in the pistons and other essential parts. This is but one of the numerous examples of how continuous basic research in corn helps American industry... helps you.

CORN PRODUCTS IN TEXTILES

For the textile industry Corn Products Refining Company supplies a variety of specialized starches, gums and dextrins... recommended ingredients for many textile processes.

We offer quality in volume supply unexcelled in the field. Complete technical service is available without cost or obligation. If you have a production problem why not check with Corn Products. We welcome your specific technical inquiries.

Manufacturers of
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brand dextrins, gums
GLOBE®
brand starch
EAGLE®
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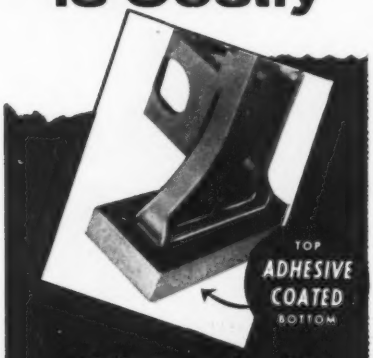
VIBRATION
is Costly



Absorb it

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WESTSORB

Adhesive-Coated

FELT MOUNTS!

Mount looms and knitting machines on vibration-dampening WESTSORB. They will last longer, cost less to maintain. No more shut-downs due to ruinous vibration; no more breakdowns of equipment and building structures. You'll have much better employee morale and efficiency when noise is reduced.

It's so simple! WESTSORB is adhesive-coated on both sides, holds firmly on old equipment or new; any floor. No holes, no bolts, and the wiry wool fibres in WESTSORB never fatigue. WESTSORB mounts resist oil, acid, grease, water and age; never fray nor ravel.

There's a special 18-page booklet waiting for you; gives data on actual WESTSORB efficiency tests under looms and knitting machines. Cooperating Western Felt dealers and engineers are located throughout the textile areas. Write today for information, or engineering assistance.

Westorb is available through:
Schmidt Mfg. Co., New Bedford, Mass.
American Supply Co., Central Falls, R.I.
Odell Mill Supply Co., Greensboro, N. C.
Greenville Belting Co., Greenville, S.C.
Industrial Suppliers, Inc., LaGrange, Ga.

WESTERN Felt WORKS

4035-4117 Ogden Ave., Chicago 23, Illinois
Branch Offices in Principal Cities

MANUFACTURERS AND CUTTERS OF WOOL FELTS

in 150-, 300-, 600-, and 900-den. yarn. The yarn carries a 35¢ per lb. premium over regular filament rayon yarn.

FLAMMABLE-FABRICS ACT

Regulations to clarify the Flammable-Fabrics Act are expected to be issued by April 1. The Federal Trade Commission is holding hearings on the regulations.

NEW NAME FOR RAYON GROUP

The American Rayon Institute, formerly the Rayon Information Center, has opened offices in the Empire State Building, New York City. The name of the organization was changed as a result of a new emphasis on promotion rather than information.

GREENVILLE SHOW EXPANDS

A new brick-and-steel building is being built adjacent to Textile Hall in Greenville, S. C., to provide an additional 14,000 ft. of exhibit space for the 1954 show next October. Total space will then be 80,000 ft.

AATCC TESTS

People who have problems in using the prescribed testing techniques recommended by the AATCC and in the interpretation of the results should get together at sectional meetings of the AATCC and have open discussions about their problems. This suggestion was recently made by Leonard Little, chairman of the Executive Committee on Research of the AATCC.

Textile Calendar

National Cotton Council, annual meeting, Biltmore Hotel, Atlanta, Ga., Feb. 1 and 2.

Five-Day Course on Corrosion Problems, Washington State College, Pullman, Wash., Feb. 1 to 5.

ASQC, Textile Div., technical meeting, School of Textiles, N. C. State College, Raleigh, N. C., Feb. 4 to 6

Philadelphia Textile Institute Alumni Assn., annual reunion, Warwick Hotel, Philadelphia, Pa., Feb. 5.

Industrial Recreation Conference, Purdue University, Lafayette, Ind., Feb. 14 to 16.

AMA, personnel conference, Palmer House, Chicago, Ill., Feb. 15 to 17.

Cotton Research Clinic, The Carolina, Pinehurst, N. C., Feb. 17 to 19.

Phi Psi, 51st annual convention, The Carolina, Pinehurst, N. C., Feb. 25 to 27.

AATCC, New York Sect., Hotel Statler, New York, Feb. 26.

Southern Safety Conference, Louisville, Ky., March 7 to 9.

Philadelphia Regional Safety and Fire Conference, Philadelphia, Pa., March 10 and 11.

Corrosion Engineers Conference and Exhibition, Kansas City, Mo., March 15 to 19.

Central Indiana Safety Conference, Indianapolis, Ind., March 17 and 18.

American Society For Testing Materials, Committee D-13, Statler Hotel, New York, N. Y., March 17 to 19.

Southern Municipal and Industrial Waste Conference, N. C. State College, Raleigh, N. C., March 18 and 19.

Alabama Cotton Manufacturers Assn., annual convention, Hotel Buena Vista, Biloxi, Miss., March 18 to 20.

Texas Safety Conference, Dallas, Texas, March 29 and 30.

Western Pennsylvania Safety Conference, Pittsburgh, Pa., March 30 and April 1.

International Trade Exposition, textile machinery included, Utrecht, Holland, March 30 to April 8.

ASQC, Carolinas Section, spring meeting, Clemson College, Clemson, S. C., April 2.

National Packaging Exposition, sponsored by American Management Assn., Convention Hall, Atlantic City, N. J., April 5 to 8.

Greater New York Safety Conference, New York, N. Y., April 6 to 9.

CMA of Georgia, annual convention, Boca Raton Hotel Club, Boca Raton, Fla., April 7, 8, and 9.

West Virginia Safety Conference, Charleston, W. Va., April 14 to 16.

LTI Alumni Meeting, Haddon Hall, Atlantic City, N. J., April 28.

Michigan Safety Conference, Detroit, Mich., April 20 to 22.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., April 23.

AMA, manufacturing conference, Hotel Statler, Cleveland, Ohio, April 26 to 28.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, April 26 to 30.

Industrial Health Conference, Hotel Sherman, Chicago, Ill., April 26 to 30.

National Assn. of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlantic City, N. J., May 3 and 4.

Hosiery Industry Conference, annual conference, Claridge Hotel, Atlantic City, N. J., May 3 and 4.

North Carolina Safety Conference, Raleigh, N. C., May 4 to 6.

The Fiber Society, spring meeting, Institute of Textile Technology, Charlottesville, Va., May 5 and 6.

American Society of Training Directors, annual conference, Schroeder Hotel, Milwaukee, Wis., May 5 to 7.

Welding and Allied Industry Exposition, Memorial Auditorium, Buffalo, N. Y., May 5 to 7.

Swiss Industries Fair, textile machinery exposition, Basel, Switzerland, May 8 to 18.

Western Safety Conference, Spokane, Wash., May 16 to 19.

Basic Materials Exposition, International Amphitheatre, Chicago, Ill., May 17 to 20.

NACM, 100th anniversary, Somerset Hotel, Boston, Mass., May 19 and 20.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 21.

SCTMA, annual convention, The Cloister, Sea Island, Ga., May 27 to 29.

International Congress of Man-Made Textiles, Paris, France, May 31 to June 3.

Society of the Plastics Industry, Public Auditorium, Cleveland, Ohio, June 7 to 10.

STA, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 10 to 12.

Canadian Textile Seminar, Queen's University, Kingston, Ontario, Sept. 9 to 12.

The Fiber Society, fall meeting, in conjunction with Textile Technical Federation of Canada and Canadian Assn. of Textile Colorists, McGill University, Montreal, Canada, Sept. 13 and 14.

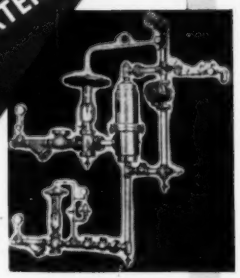
AATCC, national convention, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18.

Industrial Packaging and Materials Handling Exposition, Competition, and Short Course, Chicago Coliseum, Chicago, Ill., Sept. 27 to 30 (course), Sept. 28 to 30 (exposition).

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 8.

N. C. Textile Mfg. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 14 and 15.

Insist on **Pick** INSTANTANEOUS HOT WATER HEATERS



SAVES MONEY IN ALL TEXTILE WET PROCESSING

IN DAILY USE at . . .

Bates Mfg. Co.

Exeter Mfg. Co.

Pepperell Mfg. Co.

Fieldcrest Mills

Dan River Mills

Pendelton Woolen Mills

and many others.

Write for booklet on how Pick Heaters cut costs of hot water. No Obligation. Write Dept. TW154

PICK GIVES YOU MAXIMUM EFFICIENCY

★ *Water Is Heated INSTANTLY* by steam injection. Fuel savings are substantial because there is no waste — water is heated only as used.

★ *Pick Heaters Maintain Continuous Flow* at preset temperature for bleaching, dyeing, scouring, etc.

★ *Safe, Quiet Operation.* Exclusive "Pressurizer Piston" assures maximum safety and eliminates hammer, noise and vibration on continuous or "start and stop" loads.

★ *No Storage Tanks Required.* Pick Heaters are compact — can be installed in corners, on walls or overhead. Saves valuable floor space.

★ *Many Other Cost-Reducing Advantages.* Maintenance cost is remarkably low because Pick Heaters can be cleaned in a matter of minutes. Installation is simple and inexpensive . . . only ordinary pipe connections are required.

PICK MANUFACTURING CO.
WEST BEND, WISCONSIN

STEAM INJECTION

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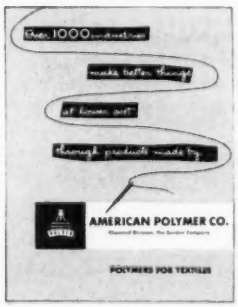

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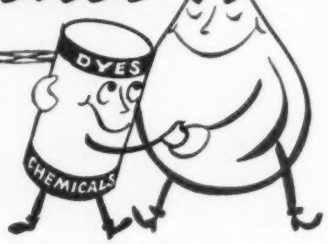
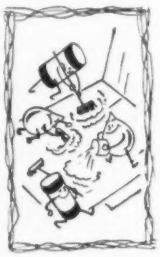
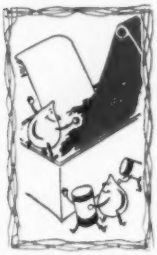
the Synergistic Versenes®



WHAT "SYNERGISTIC" MEANS

When one chemical cooperates with one or more other chemicals to make them all work better together than each could work separately, the action is called "synergistic". This explains why the synergistic Versenes are so valuable to textile processing. From cleaning and scouring processes right on through dyeing and finishing they furnish synergistic action that cuts costs, improves quality, enhances appearance.



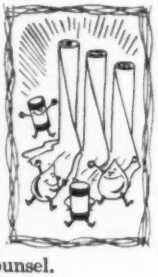


THE PROFITABLE PARTNERSHIP

When one or more of the Versenes is properly added to your wet processing formulas it can insure cleaner fibers, softer hands, whiter bottoms and brighter colors. It can prevent or remove iron, lead and other metallic stains. It solubilizes "insolubles", increases color fastness, prevents shade changes, spotting, streaking and crocking — keeps dyeing on the level.

GUARANTEED QUALITY

The synergistic action of the powerful Versene Chelating Agents is your assurance of satisfaction. Made only under F. C. Bersworth patents and process, the Versenes are extremely stable at high temperatures throughout the pH range. Chelating power is guaranteed in sample or carload lots. Available as several formulas in liquid or powder form. Send for Technical Bulletin No. 2 and samples. On complicated problems ask for Chemical Counsel.



VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gal. Versenate Method. Complete with instructions $5.00 Postpaid.

"Chemistry's most precise chemicals"

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BERSWORTH CHEMICAL CO.

FRAMINGHAM, MASSACHUSETTS

WAREHOUSE STOCKS
Chas. S. Tanner Co., Liberty Life Bldg., Charlotte, N. C.
Kraft Chemical Co., Inc., 917 West 18th Street, Chicago 8, Illinois
Siegel Chemical Co., One Hanson Place, Brooklyn 17, New York
George Mann & Co., Inc., 251 Fox Point Boulevard, Providence, Rhode Island
Barada & Page, Inc., Houston, Dallas, Corpus Christi, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
Braun-Knecht-Heimann Co., San Francisco, California
Van Waters & Rogers, Inc., Seattle, Wash. & Portland, Ore.
Braun Corporation, Los Angeles, California

NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

Alvey Conveyor Mfg. Co., St. Louis, Mo., has made Curran S. Easley district manager in Greenville, S. C.

Baker-Raulang Co., Baker Industrial Truck Div., Cleveland, Ohio, has elected William A. Bauer president and appointed Charles N. Sumwalt, Jr., executive vice president of The Baker-Raulang Co.

Bausch & Lomb Optical Co., Rochester, N. Y., has made William H. Webb superintendent of manufacturing in its Instrument Div.

Borg-Warner Corp., Chicago, Ill., has appointed R. B. Crean as a vice president of the Ingersoll Products Div. Mr. Crean also will retain his title of assistant general manager of the division. A. R. Ficker has been appointed director of advance engineering for the Rockford Clutch Div., Rockford, Ill.

Dixon Corp., Bristol, R. I., is the new name of Dixon Lubricating Saddle Co.

General Electric Co., Waterford, N. Y., has made John T. Castles manager of its Technical Services Unit, Marketing Section, Silicone Products Dept. Mr. Castles' headquarters will be in Waterford, N. Y.

Industrial Specialty Manufacturing Co. Ltd., Magog, Que., Canada, has been appointed sole Canadian and American agent for Societe Industrielle Allegro, S. A., of Switzerland.

Leeds & Northrup Co., Philadelphia, Pa., has made Wilson D. Trueblood, Jr., district manager of a new office at 828 N. Broadway, Milwaukee, Wis., to serve all of Wisconsin and Minnesota, at the northern peninsula of Michigan, North and South Dakota east of the Missouri River, and the Canadian provinces of Manitoba and western Ontario.

Lewis-Shepard Products, Inc., Watertown, Mass., has appointed Thomas M. Murphy as district sales manager of the industrial area surrounding Chicago.

OSBORNE BEZANSON has been elevated to chairman of the board of Chemstrand Corp., Decatur, Ala. Henry H. Bitler has been made president. New vice presidents are: Roy G. Hemminghaus, F. William Koster, W. G. Luttge, and Frank J. Soday.

Macbeth Corp., Newburgh, N. Y., has appointed Robert E. Meeker assistant to the general sales manager.

Mathews Conveyer Co., Ellwood City, Pa., has appointed L. J. Johnson general sales manager.

Minnesota Mining & Manufacturing Co., St. Paul, Minn., has promoted Richard F. Woelfel to sales manager for electrical products in the Chicago area. L. E. Larson has been made merchandising manager for tape products, and John J. Jungbauer has become director of tape development engineering.

The Permutit Co., New York, N. Y., is building a modern metal-working plant at Lancaster, Pa., to expand and increase manufacturing facilities.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has purchased a 45-acre tract in Harmar Township, near Pittsburgh, as the future location for a glass research laboratory.

Still on Top!

with the many exclusive performance features that have made

ECLIPSE BOBBIN HOLDERS

THE FAVORITE!

The many exclusive features built into the Eclipse Bobbin Holder have made it the favorite of many leading textile organizations. They have found in actual operation that the Eclipse Bobbin Holder is outstanding in every way, and that the Eclipse reputation for basic quality and goodness is well deserved. If you are interested in modernizing your present plant equipment, you will surely want the finest—and the finest means Eclipse. Investigate today by writing or calling the Eclipse Machine Company direct.

These Features Mean Eclipse Superiority

1. Completely replaces wooden skewers.
2. Ball bearings minimize friction, resulting in uniform quality of roving.
3. Permits less twist. Tests indicate yarn of more even texture.
4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents overrun and backlash.
8. Now cadmium plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

Export Sales: Bendix International Division, 205 East 42nd St., N. Y. 17, N. Y.

ECLIPSE MACHINE DIVISION of Bendix AVIATION CORPORATION
ELMIRA, NEW YORK

Desize with EXSIZE -T*

For reliable, efficient, economical preparation of cloth prior to bleaching, dyeing, printing and special finishing, depend on EXSIZE-T.

Let us help solve your desizing problem.

Send for free sample and data.

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News About **SUPPLIERS** (Continued)

WALTER C. THOMPSON (left) and RAY B. NICHOLS have been made president and executive vice president, respectively, of The Torrington Co., Torrington, Conn.

H. K. Porter Co., Inc., Pittsburgh, Pa., has made L. L. Garber a director, vice president, and general manager of The Alloy Metal Wire Co., Prospect Park, Pa., the newly acquired division of H. K. Porter. J. M. Tough is the new sales manager, Watson-Stillman Fittings Div. M. G. Lucke has been named superintendent of moulded hose at the Quaker Rubber Div. He will be in charge of all moulded hose production.

Raybestos-Manhattan, Inc., Manhattan Rubber Div., Passaic, N. J., has made three appointments at the Passaic plant: C. P. McHugh, who has been manager of the Roll and Tank Depts., is now assistant director of research and product design; S. F. Horesta has succeeded Mr. McHugh as manager; E. D. Hines has moved up to assistant manager.

Reliance Electric & Engineering Co., Cleveland, Ohio, has promoted C. V. Gregory to manager of district sales. Antony C. Schettler is now Baltimore branch manager, and Wilmer K. Schlotterbeck is Buffalo district manager. C. B. Allen, Jr., has been appointed Detroit district manager, succeeding J. L. Buell, Jr., resigned.

Robertshaw-Fulton Controls Co., Philadelphia, Pa. has made Frederick L. Maltby technical director in charge of all research, development, and design facilities at the Fielden Instrument Div.

Rodney Hunt Machine Co., Orange, Mass., has appointed Industrial Heat Engineering Co., Greenville, S. C., as sales and service representative in the Southeastern states.

Square D Co., Detroit, Mich., has given Lawrence G. Maechtlen, a vice president, additional duties as manager of its Western Div., and J. H. Pengilly, also a vice president, has been named chairman of the Western Div. executive committee.

Standard Mill Supply Co., Providence, R. I., has appointed Jerry L. Haynie, 2195 Bolton Road, Atlanta, Ga., to represent the company as its exclusive agent in the state of Georgia.

Tower Iron Works, Providence, R. I., has appointed Richard K. Muller chief engineer.

United States Steel Corp., Chicago, Ill., has named Harry M. Reed vice president in charge of sales, to succeed W. B. Renois, resigned. Richard G. Patterson will succeed Mr. Reed as central district manager. Arthur C. Wilby has retired as vice president of the company and will be succeeded by Edward C. Logelin.

Warner Electric Brake & Clutch Co., Beloit, Wis., has appointed Quinn and McGill Motor Supply Co., Denver, Col., a distributor. The Denver firm will act as sales and service organization for Warner electric brakes in the states of Colorado, New Mexico, Wyoming, and portions of Montana, Nebraska and South Dakota. Arthur Schroeder has been named Southeastern application engineer. Mr. Schroeder will maintain offices at 4146 Caldwell Rd., Brookhaven, Ga.

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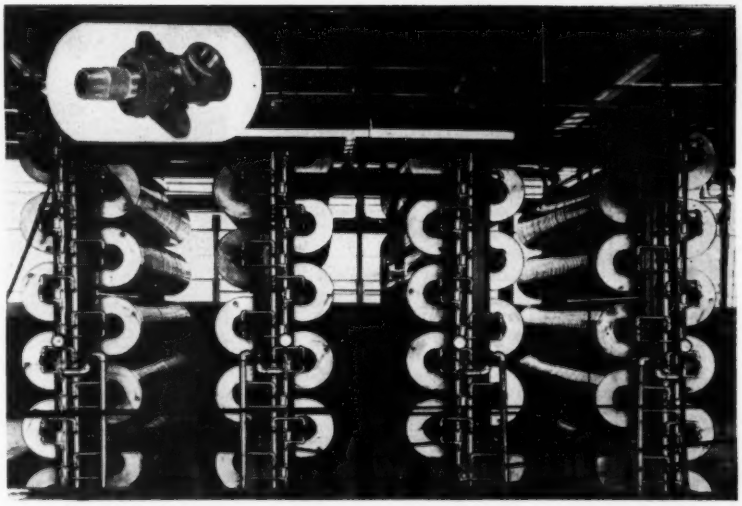

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News About SUPPLIERS (Continued)

CHEMICAL & YARN SUPPLIERS

Allied Chemical & Dye Corp., Solvay Process Div., Moundsville, W. Va., has started chlorine and caustic soda operations at the new Perkins Plant, its initial operation in the Moundsville area. The plant utilizes the salt from the deposit located under the property as raw material in its chemical production.

American Cyanamid Co., New York, N. Y. has made several changes in managerial organization. Kenneth H. Klipstein has been appointed general manager of the Research Div. The new Organic Chemicals Div. has L. C. Duncan as general manager and V. E. Atkins, assistant general manager. A. B. Clow is general manager of the Fine Chemicals Div. and A. R. Loosli is assistant general manager. The new Pigments Div. has J. Allegaert as general manager and A. B. Hettrick, assistant general manager. C. W. Bendigo, formerly a member of the New Products Development Dept., has been named manager of the Fiber Development Dept. Mr. Bendigo was previously chief editor of TEXTILE WORLD. The Calco Chemical Div., Bound Brook, N. J., has named William C. Marshall representative of the Dyestuff Dept. for the Pacific Northwest territory. He will make his headquarters at 935 N. W. 125th Ave., Portland 9, Ore.

American Enka Corp., New York, N. Y., has made William Gage Brady, Jr. chairman of the board to succeed the late Franklin D'Olier.

American Viscose Corp., Philadelphia, Pa., has employed Myron W. Brill as a sales representative in the New York area for the Sylvania Div. Robert P. Thornton has been employed by the Boston Sales office. His territory is South Massachusetts, Rhode Island, and part of Boston.

Armour and Co., Chicago, Ill., has made Paul F. Tevis general sales manager of the Soap Div. He will direct the sales of household soap, industrial and contract soap, and glycerine departments.

Atlas Powder Co., Wilmington, Del., has elected D. J. C. Copps a vice president in charge of the company's explosives, industrial finishes, and engineering departments.

F. WARE NEWBURY has been made vice president in charge of sales of Alan Berni & Associates, Inc., New York, N. Y.

Berkshire Color and Chemical Co., Delawanna, N. J., has built a new building to house its laboratories and administrative offices. William J. Greene has been appointed technical sales representative for the company. His territory includes New England and upper New York.

Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp., New York, N. Y., has reorganized five district offices: G. E. Kuehn and J. K. Marshall are now assistant district managers, New York District; J. J. Berry is assistant district manager, Chicago District; H. H. Norem is assistant district manager, Cincinnati District; G. E. Bernard is assistant district manager, San Francisco District; and H. E. Klein is assistant district manager, St. Louis District.

The Chemstrand Corp., Decatur, Ala., has made Murray H. Morse nylon sales manager. Mr. Morse is located at the Chemstrand general sales headquarters located at 350 Fifth Avenue, New York, N. Y. Robert H. Helle has been promoted to administrative assistant to the director of research.

Courtaulds, Inc., New York, N. Y., has appointed T. G. Ethridge to the company's sales staff. He will be located at Courtaulds' office in Greensboro, N. C.

Emery Industries, Inc., Cincinnati, Ohio, has started con-

News About **SUPPLIERS** (Continued)

struction of a new $800,000 research center. The new building will provide new and larger quarters for the departments of Basic Research, Development, and Chemical Engineering.

General Aniline & Film Corp., New York, N. Y., has made Dr. Frederick M. Meigs assistant general manager of foreign operations. John H. Hilldring, who was recently elected senior vice president of GAF, will continue for the present the responsibilities of general manager of foreign operations.

General Chemical Div., Allied Chemical & Dye Corp., New York, N. Y., has appointed three new vice presidents to head major segments of its operations. Vincent W. Suellau has been named vice president in charge of sales; I. H. Fooshee, vice president in charge of development; and Harry S. Bowen, vice president and auditor.

Goodyear Tire & Rubber Co., Akron, Ohio, has made Herman **R. Thies general** manager of all chemical products.

Hercules Powder Co., Wilmington, Del., has named a new treasurer and two new directors. John E. Goodman has been elected treasurer to succeed Francis J. Kennerley, retired. John M. Martin, general manager of the Explosives Dept., and John R. L. Johnson, Jr., director of the Legal Dept., have been elected directors of the company at the same meeting to fill the vacancies created by the retirement of Mr. Kennerley and William R. Ellis, vice president. R. H. Dunham, former president and chairman of the board has also retired. He will continue as a member of the board of directors. J. O. Small has been appointed an assistant director of sales of the Synthetics Dept. A new sales office has been established in Atlanta, Ga., for the Synthetics Dept. in the Rhodes Haverty Building, 134 Peachtree St.

Pittsburgh Coke & Chemical Co., Pittsburgh, Pa., has appointed Dr. Ben H. Kirby superintendent of operations. He will be responsible for all of the production, maintenance, quality control, process development, and manufacturing activities of the Fine Chemicals Div. A. F. Beane has opened a dyestuff sales office in Charlotte, N. C., at 1524 South Boulevard.

Polymer Industries, Inc., Astoria, N. Y., has built a modern new plant, designed for expanded production and overall efficiency, in Stamford, Conn. In addition to its new plant the company will continue to produce its line of adhesives and textile chemicals and finishes at the Polymer Southern plant in Greenville, S. C.

A. E. Staley Mfg. Co., Decatur, Ill., has announced that G. H. Batchelder, manager of the Boston office for the last 15 years, has taken over new duties there at his own request. He has been succeeded as manager by R. E. Kilty. Mr. Batchelder desires to devote more of his time to his primary interest, which is sales contacts.

Tennessee Eastman Co., Kingsport, Tenn., has made known that Eastman Chemical Products, Inc., Kingsport, Tenn. will act as sales representative for Tennessee Eastman Co. in the marketing of Eastman acetate yarn and staple. In this capacity it will have responsibility for those activities connected with Eastman textile products formerly handled by A. M. Tenney Associates, Inc. Personnel heretofore engaged in sales, sales promotion and fabric development functions for A. M. Tenney Associates, Inc., will serve in similar capacities for Eastman. Textile Div. offices will be at the following addresses: Kingsport, Tenn.; New York, N. Y.; Greensboro, N. C.; E. Providence, R. I.; and Greenville, S. C.

United Dye and Chemical Corp., Belleville, N. J., has acquired a controlling interest in Camden Forge Co.

OTHER SERVICES

Meinhard & Co., Inc., New York, N. Y., has made Charles J. Palmer Southern representative. He will maintain offices in the Johnston Building, Charlotte, N. C.

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NEWS ABOUT Mills

COTTON MILLS

Adamo Co., Los Angeles, Calif., has purchased a new one-story building at 5700 S. San Pedro St. The new building contains about 60,000 sq. ft. of floor space. New equipment will be installed.

Alice Mfg. Co., Easley, S. C., has placed an order for new looms for its new Elijean Div. with Hunt Loom & Machine Works, Inc., Greenville, S. C. The Elijean plant will contain 40,000 spindles. Operations will begin this spring.

Aragon Mills, Aragon, Ga., is erecting a mill addition that will cost $1,000,000.

Baxter, Kelly & Faust, Inc., Stoneville, N. C., has let the contract to Air Engineering Co., Charlotte, N. C., for the installation of a heating and ventilating system in its new addition. McPherson Co., Greenville, S. C., is the architect and engineer.

Cabin Crafts, Inc., Dalton, Ga., expects to complete its $2,000,000 expansion program next month. A new building containing 103,000 sq. ft. of floor space has been added to the present mill.

Callaway Mills, LaGrange, Ga., has combined the operations of the Valway Plant and the Dye Plant in the HDV Division. The two plants will be known as the Valway Plant. S. P. Rice is superintendent of the combined plant. John M. Blackmon, superintendent of the Dye Plant, has been made an assistant superintendent of the Valway Plant.

Chenille Rug Co., Minneapolis, Minn., has established a new weaving department for the production of a new line of carpets. Looms acquired from Klearflax Linen Looms, Inc., Duluth, Minn., have been installed.

Corriher Mills Co., Landis, N. C., has installed 33 new spinning frames, with a total of about 9,000 spindles, and eight new twisters in the original No. 1 spinning room.

Jackson Mills, Wellford, S. C., has begun an expansion program that will increase production about 25%. About 75 looms and 4,000 spindles will be added. Lockwood Greene Engineers, Inc., Spartanburg, is the engineer. The cost is estimated at about $600,000.

Katherine Rug Mill, Dalton, Ga., has completed a new one-story mill. The new mill contains about 60,000 sq. ft. of floor space.

Mayfair Mills, Arcadia, S. C., has a modernization and expansion program under way at its Plant No. 2. New equipment to be installed includes 64 Saco-Lowell spinning frames.

Ojay Spread Co., Calhoun, Ga., is nearing completion of its new one-story addition. The cost is reported to be about $35,000.

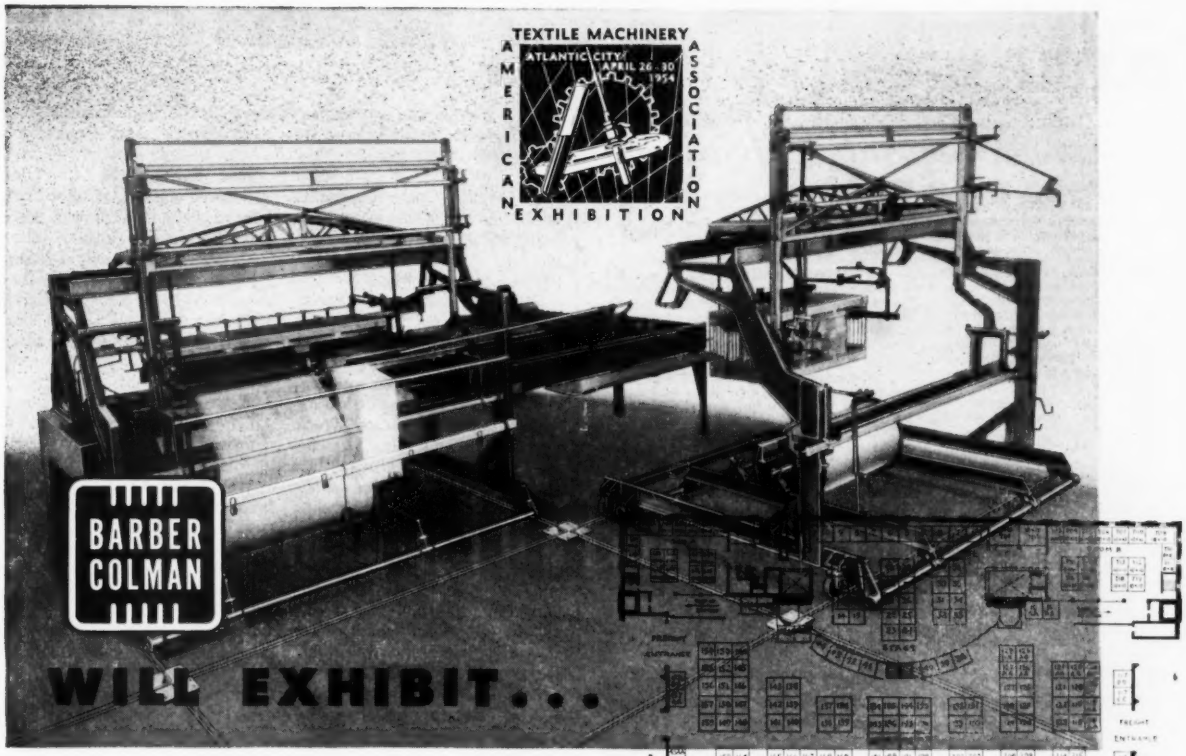
Opp Mills, Opp, Ala., is nearing completion of a new weave shed. About 250 looms will be in operation when production is started. The company plans to increase this initial installation to 1,000.

Riegel Textile Corp., Trion, Ga., is completing plans for a new branch mill at Brundidge, Ala. Bids for construction are expected to be asked soon.

Shelbyville Mills, a unit of U. S. Rubber Co., Shelbyville, Tenn., will install Bahnson Humiducts in its new addition. The company is also adding Humiducts to the existing Bahnson equipment in another area of the mill.

WOOLEN AND WORSTED MILLS

Albany Felt Co. of Canada, Cowansville, Que., will install a new 600-in. Crompton & Knowles felt loom, a Davis &



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SYNTHETIC-FIBER TABLE — **50¢ each, 40¢ in lots of 20 or more**
The latest (1953) edition lists by type and name all U. S. yarns and staple fibers in commercial production. A list of suppliers by type and form of fiber is also included. Valuable related data and a "Terminology and References" section are included. Comparative properties of wool and cotton fibers are included. An explanation of glass-fiber nomenclature and its yarn-numbering system makes conversion to cotton counts easy.

WOOL-SYSTEMS FLOW CHART — **35¢ each, 25¢ in lots of 20 or more**
New (1953) edition shows all the processes in making woolen and worsted fabrics on all yarn systems. Six typical finishing routines are also pictured to cover the main fabric types. The chart includes the manufacture of synthetic and blended fabrics on wool systems.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

CONTINUOUS-FILAMENT FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
Principal and alternate step-by-step process in handling continuous-filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

KNITTING FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half-hose, and knitted underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
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An up-to-date listing of the important English-language books on textile technology. Twelve-page folder lists more than 1,400 items in 20 categories and includes a directory of publishers.

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These tables permit quick determination of ½ to 25% shrinkage, covering pieces from 50 to 100 yds.

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News About **MILLS** (Continued)

Furber picker, and a custom-built Riggs & Lombard double-sided rotary fulling mill.

Allendale Co., Allendale, R. I., has received a permit to build an addition of concrete block to its present plant. The estimated cost is $12,000.

Ames Worsted Co., Lowell, Mass., has let the contract to Singleton-Embree-Reed, Inc., Charlotte, N. C., for piping and mechanical work in its new mill now under construction at Cleveland, Ga. The entire plant will cost about $2,000,000. McPherson Co., Greenville, S. C., is the architect and engineer.

Biltmore Industries, Asheville, N. C.—Controlling interest in this mill has been bought by a local group. The new officers are Harry Blomberg, president; J. L. Groome, vice president; and Roland Aberle, secretary-treasurer; R. A. Stevens, production and plant manager. Production of hand-woven fabrics will be continued.

Dublin Woolen Mills, Dublin, Ga., has changed its name to Dublin Mills because of its extensive use of fibers other than wool.

Ellsworth Worsted Mill, Ellsworth, Me., has about completed its bond drive and the new plant is expected to be in operation June 1. Operation will be controlled by the Lincoln Processing Co. Worsted spinning machinery will be imported from France.

Hightstown Rug Co., Hightstown, N. J., broke ground recently for its new velvet-carpet mill. The new plant, containing 300,000 sq. ft., will cost about $2,250,000. Completion is expected by next August.

Hot Springs, N. C.—The $800,000 plant that is being erected by local interests and leased to Goodall-Sanford, Inc., for a period of 12 years is nearing completion. The building measures 120x450 ft. Goodall-Sanford will install $1,000,000 worth of equipment for yarn production.

A. & M. Karagheusian, Inc., Albany, Ga., is adding a new wing containing 10,000 sq. ft. The cost is $53,000. The new addition will be used mostly for warehouse space. The present storage space will be available for manufacturing. Additional equipment will be installed.

Person Mills, Roxboro, N. C., which has been operating on mending and burling for the past six months, is understood to be planning a new 100x120-ft. mill.

Philadelphia Carpet Co., Philadelphia, Pa., has opened a new branch plant and warehouse at 3424 Sunset Blvd., Los Angeles, Calif. The structure totals about 10,000 sq. ft. of floor space.

Ski Land Woolen Co., Clinton, Me., has completed a two-story, 55x65-ft. addition to its local plant and has added 8 looms to its previous 24.

Alexander Smith, Inc., Yonkers, N. Y., has awarded the contract to Walter Kidde Constructors, Inc., New York, N. Y., for a new factory branch and warehouse at Columbus, Ohio. The new addition will contain about 100,000 sq. ft. of floor space. The estimated cost is close to $500,000.

SYNTHETICS PLANTS

Coaticook Textiles Ltd., Coaticook, Que., plans an addition to its Water St. mill building that will provide 14,000 sq. ft. of manufacturing space. Rene & Gerard Charbonneau, Montreal, is the architect.

KNITTING MILLS

Alamac Knitting Mills, Indian Orchard, Mass., has erected a plant addition for the operation of its newly developed shrink-resistant process called Permathal.

Alden Mills, Meridian, Miss., is constructing a new addition to be used for warehouse service. The cost is $100,000.

William Carter Co., Barnes-

News About **MILLS** (Continued)

ville, Ga., has asked for bids on the general construction contract for a new one-story addition that will cost about $500,000. The new addition will contain a knitting room and washing and bleaching area. Robert & Co. Associates, Atlanta, is the architect and engineer.

Dogwood Hosiery Mills Co., Inc., Thomasville, N. C., has purchased a set of 160-needle spiral-wrap knitting machines from Morris Speizman Co., Inc., Charlotte.

E-Z Mills Co., New York, N. Y., has taken over the present plant location of Bartow Textile Co., South Cartersville, Ga. The company has purchased 25 acres west and south of the Bartow building for possible expansion.

Forrest Fabrics Ltd., London, Ont., will move to a new location in Ingersoll, Ont. Extensive renovations and repairs are planned for this building. The plant contains 10,000 sq. ft. of floor space, and an additional 10,000 sq. ft. may be leased. About 20 persons will be employed at the start of operations.

Frances Products Ltd., Village St. Joseph, Que., is erecting a one-story hosiery mill on Rue Sylva Clapin, St. Hyacinthe. The cost is estimated at $10,000. The new building measures 70x100 ft.

Galax Knitting Co., Galax, Va., has been sold to Morris Spiezman of Charlotte, N. C., who will continue to operate the plant. Tim Pollard, president, will remain in his present capacity for a short time to aid in the change-over. Some machinery will be replaced.

Hadley Corp., Weaverville, N. C., has begun limited production in its new $150,000 plant. Richard M. Taylor is the general manager. Warren Kilpatrick will be the supervisor of knitting, and Mrs. Dorothy Gladwell will be in charge of the finishing department.

Hanes Hosiery Mills Co., Winston-Salem, N. C., has let a contract to Bahnson Co., Winston-Salem, N. C., for the installation of air conditioning in its knitting, looping, and seaming departments.

NoMend Hosiery, Inc., Lebanon, Pa., will transfer its seamless operations from Palmyra, Pa., to Lebanon by July 1. Additional 66-gauge full-fashioned machines may also be added at Lebanon.

Reamstown Hosiery Mills, Inc., plans to open a women's seamless hosiery plant in Reamstown, Pa. The firm has purchased 60 400-needle Fidelity machines. The company will continue its operations at Mohnton.

Russell-Harvelle Hosiery Mills, Mt. Gilead, N. C., has purchased Crystal Hosiery Mills, Stanfield, N. C. The name of this mill has been changed, and it is now Snappy Sox, Inc.

Sheer Silk Hosiery Mills Ltd. plans a further addition to its new plant in Sussex, N. B. The plant is now equipped with 27 full-fashioned knitting machines in 51 and 66 gauge. The company has transferred all knitting operations to Sussex, but continues dyeing and finishing operations in Sherbrooke, Que.

Strutwear, Inc., Minneapolis, Minn., will increase its facilities at Clarksdale, Miss. The company plans to manufacture, in addition to its present products, tricot for lingerie and blouses.

Sulloway Hosiery Mills, Franklin, N. H., has merged with Arwood Tilton Corp., Franklin, and a wholly owned subsidiary of Arwood Precision Casting, Inc., Brooklyn, N. Y. Under the merger, the following will comprise the board of directors: Rawson L. Wood, Richard Sulloway, Rudolph O. Prosser, N. R. Lasher, A. H. Nighswander, and W. I. Matthes.

Union-Underwear Co., Campbellsville, Ky., has installed a Becco continuous bleaching range that will handle up to 145,000 lbs. of cloth per week.

Ware Knitters, Inc., Ware, Mass., has started construction of a new plant in Calais, Me. The firm plans to move the present Calais operation into a new building.

Warner Bros. Co., Moultrie, Ga., will double its present plant capacity.

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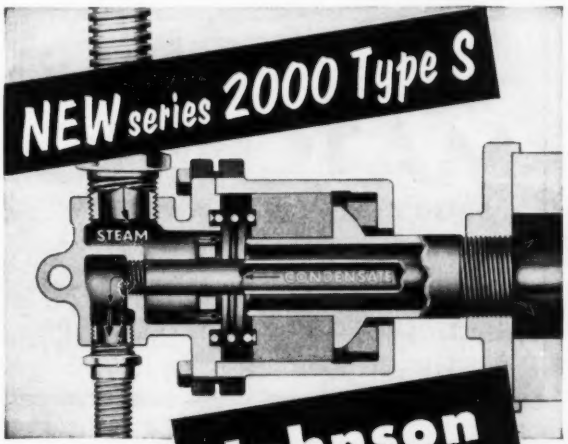

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Branch: Concord, N. C.

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Thomas C. Assheton Co. • 11 West 42nd St. • New York 18
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DOESN'T HAVE TO BE A PROBLEM

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The new ANALYTE COLOR COMPARATOR is the answer.

CROWN ENGINEERING AND SALES CO.

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RAYON PLANTS & TEXTILE MILLS

KULJIAN

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MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO • CALCUTTA

News About **MILLS** (Continued)

DYEING AND FINISHING PLANTS

Berkshire Fine Spinning Associates, Providence, R. I., is remodeling its recently acquired King Philip finishing plant.

Crompton-Shenandoah Co., Waynesboro, Va., closed bids for mechanical installation in its new mill now being constructed at Osceola, Ark. The mill will be known as Osceola Finishing Co. The cost is approximately $3,000,000.

Greenwich Printing & Dyeing Co., East Greenwich, R. I., has added a complete plissé unit to its plant. In addition to this unit, the finishing plant is installing a friction calender for chintz finishes.

Hartsville Print & Dye Works, Inc., Hartsville, S. C., will change its name to the Hartsville Div. of U. S. Finishing Co. Its operations are wholly unchanged.

Kendall Co., Newberry, S. C., has awarded the contract to Daniel Construction Co., Greenville, S. C., at $350,000 for the construction of a new finishing mill at Bethune, S. C.

Pantasote Co., High Point, N. C., has acquired a new warehouse at 2291 English St. William Bennett is the district manager in charge.

Penn Hosiery Finishers, Reading, Pa., has moved its offices from 911 Geiger Court to 126 N. 10th St.

Phillips-Jones Corp. will complete its $77,000 addition at Patton, Pa., this month. The new addition will add 10,000 sq. ft. of floor space.

Thomaston Mills, Thomaston, Ga., plans to construct an addition of 4,500 sq. ft. of elevated floor space to its bleachery division. The addition will provide for the rearrangement of facilities to permit the installation of a new Sanforized-process machine.

MISCELLANEOUS MILLS

Artex Mfg. Co., Asheville, N. C., has been incorporated. The authorized capital is $100,000. Principals are Edward H. Feld, Betty L. Feld, and Karl H. Straus, all of Asheville.

Ludlow Mfg. & Sales Co., Ludlow, Mass., will concentrate the production of its new branch mill at Indianola, Miss., on jute backing for rugs. About 400 persons will be employed when operations get under way. A considerable part of the output will be used by the new Greenville Mills, Inc., Greenville, Miss.

National Textiles Corp., Montreal, Que., is building a 30x65-ft. warehouse on Iberville St. at a cost of approximately $60,000. Smith Building Services Ltd., Montreal, is the general contractor. Architect is Luke & Little, Montreal.

FOREIGN MILLS

Alamac Knitting Mills, Indian Orchard, Mass., is cooperating with the Philippine textile firm of Pablo Floro & Sons in setting up a modern knitting plant on the outskirts of Manila. Alamac will sell Floro $100,000 worth of knitting and finishing equipment and act as Floro's agent for purchases of cotton and other raw materials in the United States. The new plant's production of cotton knitted fabrics will not be shipped to the United States but will be marketed in the Far East.

Amman, Jordan—The Jordanian Government is planning the establishment of a weaving plant in Jordan that would supply Jordan's needs in cotton cloth. It might also be used for the production of woolen cloth.

Cia Fiacao e Tecidos Nossa Senhora Do Carmo, Sorocaba, Sao Paulo, Brazil, has purchased 300 looms from Crompton & Knowles Loom Works.

How to keep informed on the "with what" part of your business

AT YOUR FINGER TIPS, issue after issue, is one of your richest veins of job information – advertising. You might call it the "with what" type – which dovetails the "how" of the editorial pages. Easy to read, talking your language, geared specifically to the betterment of your business, this is the kind of practical data which may well help you do a job quicker, better – save your company money.

Each advertiser is obviously doing his level best to give you helpful information. By showing, through the advertising pages, how his product or service can benefit *you* and *your* company, he is taking *his* most efficient way toward a sale.

Add up all the advertisers and you've got a gold mine of current, on-the-job information. Yours for the reading are a wealth of data and facts on the very latest in products, services, tools . . . product developments, materials, processes, methods.

You, too, have a big stake in the advertising pages. Read them regularly, carefully to keep job-informed on the "with what" part of your business.

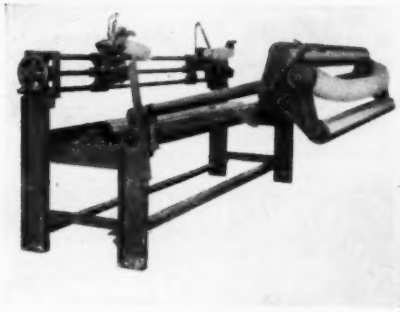
McGRAW-HILL PUBLICATIONS

You can

CUT PRODUCTION COSTS AND IMPROVE QUALITY

with

Mount Hope FREE WHEELING EXPANDERS



Batcher Expander and Precision Guider Unit for Tire Cord Fabric

All over the world Mount Hope Expanding Devices handle all types of wrinkling, creasing and spreading applications in textile mills. 80% of the mills in the United States use them, and nearly all machinery builders incorporate them on their machines.

HAVE A MOUNT HOPE ENGINEER ANALYZE YOUR CLOTH HANDLING PROBLEMS—NO OBLIGATION.

Ask for Expander Bulletin ECB.

ANOTHER Mount Hope CLOTH HANDLING DEVICE

Write for details — or have a Mount Hope Engineer advise without obligation. See our money-saving devices at Booths 370 & 371 A.T.M.A. Exhibition, April 26-30.

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MOUNT HOPE MACHINERY COMPANY

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with a BALLYMORE Safety-Step LADDER

Production goes up . . . accidents decrease . . . when a Ballymore Safety Ladder joins the working force. The hard-to-get-at places on looms, spinning frames and creel racks are within safe reach. Workers can do high-up jobs with ground floor safety, without fear of falling.

Special tread on steps gives safe, secure footing. Sturdy handrails guard against falling. All steel construction. Three to eight steps with, one to three steps without, handrails.

Roller Casters for Easy Portability 4 Point Grip on Rubber-Tipped Legs Can't Roll, Kick out or Sway.

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Processed Synthetic Fibers

CUT STAPLE OUR SPECIALTY

NYLON • ORLON DACRON

Mill: Woodville, Rhode Island

EISENBERG Fibers, Inc.

173 Hudson Street New York 13, N. Y.

CAnal 6-4290, 4291

NEWS ABOUT Men

Emil W. Bauman, general superintendent of the Pennsylvania Ave. weaving plant of Hess, Goldsmith & Co., Inc., Wilkes-Barre, Pa., is taking over complete charge of the company's recently acquired weaving plant at Taylor, Pa., in addition to his present duties. **W. J. Berg** is now technical director and **John Churry** is now production manager of the Pennsylvania Ave. weaving plant. **Emerson W. Swartz** has joined the company as personnel manager and purchasing agent.

Garland E. Bennett, former manager of Chadbourn Hosiery Mills, Plant No. 1, Burlington, N. C., has been named manager of the company's Shenandoah, Va., plant. **William Bumgardner** will serve as office manager and **Buel S. Combs** as superintendent.

HAROLD W. WHITCOMB has been elected president and a director of Fieldcrest Mills, Inc., Spray, N. C. He succeeds Milton C. Mumford, resigned.

Ely R. Callaway is retiring as vice president of Callaway Mills Co., LaGrange, Ga. **George O. Jones,** assistant vice president and credit manager, will succeed Mr. Callaway.

Robert Cameron has been appointed chief dyer of Indian Head Mills, Inc., Nashua, N. H.

John R. Cassleman, Jr., and **George Kegelmeyer** have been appointed assistant vice presidents of William Iselin & Co., Inc., New York, N. Y.

David A. Cavell has been elected vice president of Debonaire Hosiery Mills, Inc., New York, N. Y.

Charles P. Clemons has been named superintendent of Pennsburg Mills, Inc., Pennsburg, Pa.

Emil S. Davis will succeed **Alfred H. Thatcher** as treasurer and assistant secretary of Standard-Coosa-Thatcher Co., Chattanooga, Tenn. Mr. Thatcher is retiring.

John H. Dulin has been named superintendent of dyeing and color development at Carol-May Finishing Co., Concord, N. C.

J. L. Eskridge has returned to Burlington Mills Corp., Greensboro, N. C., where he is again a manufacturing executive in the filament section.

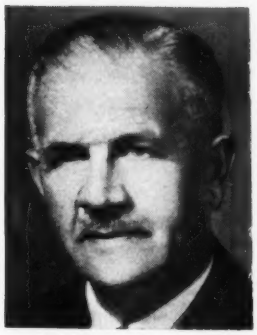
Dr. Henry L. Forbes has

MORRIS L. HIRSH (left) and DICK LEVI (right) have been named vice presidents of Star Woolen Co., Cohoes, N. Y. ROBERT J. STEIN (center) has been named treasurer.

News About MEN

(Continued)

News About **MEN** (Continued)



P. W. BEGGS has been appointed superintendent of the textile plant of Goodyear Tire & Rubber Co., Rockmart, Ga. He succeeds the late E. A. Powell.

LUTHER E. GATLIN, JR., has been named manager of the Aragon Plant of A. D. Juilliard & Co., Aragon, Ga., succeeding H. M. McKelvey, resigned.

been appointed manager of the newly established planning department of Canadian Industries Ltd., Montreal, Que.

Clifford Fox has returned to Kammak Mills, Inc., and Kulpmont Mfg. Co., Kulpmont, Pa., as general manager.

D. L. Gery has been named director of the plant-engineering department for all mills in the Abney Mills chain. **M. E. Hitt** has been named superintendent of services and maintenance for mills 1, 4, and 6, Greenwood, S. C.

J. Hassett is now foreman of carding at the Felters Co., Millbury, Mass.

E. L. Henderson, Jr., secretary of West Point Mfg. Co., West Point, Ga., has been named secretary and controller.

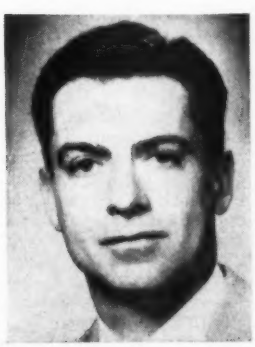
Ed C. Benton, Jr., auditor, has been made assistant controller.

Charles Heitert has been named superintendent of the new plant that Jantzen Knitting Mills, Inc., is establishing at Seneca, S. C.

Ernest Horvath has been elected president of Massachusetts Mohair Plush Co., Lowell, Mass., succeeding **Joseph E. Duval**, resigned. **Dan H. Edmonson** has been chosen vice president to succeed **Nathaniel E. Duval**, who has also resigned.

Bert Joss has been named vice president in charge of production at Debonaire Hosiery Mills, Inc., New York, N. Y.

Adolph Kalafarski has been appointed superintendent of the knitting room at Ware



GEORGE R. CAMPBELL has been appointed general manager of Triangle Finishing Corp., Johnstown, N. Y.

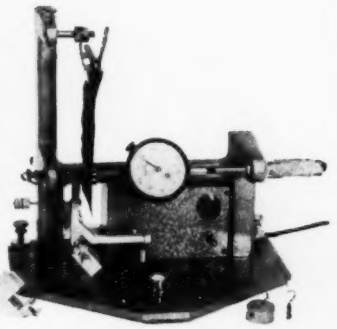
J. HOWARD ANDERSON has been named general manufacturing manager of Linen Thread Co., Inc., Paterson, N. J.

LOW PRESSURE THICKNESS GAUGE

Specially designed for determining the thickness of soft, bulky fabrics

SPECIAL ADVANTAGES

A) Fabric Suspended Vertically
B) Essentially Free from Friction
C) Essentially Independent of Operator Errors
D) High Reproducibility
E) End-Point Determined by Pressure Transmitted Through the Fabric



• Can be used to secure data on bulk, compressibility insulation value and other properties not obtainable on thickness gauges operating at high pressures.

No method or instrument for the measurement of thickness at low pressures has been adopted as standard in the United States of America. This instrument can be operated at pressures of from 1 to 100 grams/cm². or from 0.01 to 1.5 p.s.i.

CSI CUSTOM SCIENTIFIC INSTRUMENTS, INC.
541-543 Devon Street Arlington, New Jersey
MANUFACTURERS OF CUSTOM-BUILT LABORATORY EQUIPMENT

MATERIALS HANDLING COST REDUCTION

Let us help you find **extra profit** in your operations.

A Preliminary Survey—
without charge will determine the potential savings and the cost.

We invite your inquiry.

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Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

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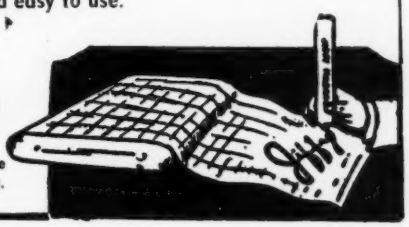
Philadelphia 44, Pa.



For more information, write direct or use Reader Service post card. 265

the Chalk of Chalks!

ATLANTIC®

ATLANTIC Textile Mill Chalk Marking Crayon was developed for use with all types of bleaches. It is velvety in texture, economical in use. Available in 35 colors, in 4"x1" sticks, one-half gross packs of solid or assorted colors.

Send for FREE illustrated crayon price book sheet to Dept. TTW2

BINNEY & SMITH INC.
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LEADING SHUTTLE FEATURES BY THE SHUTTLE PEOPLE

Pick and Pick Shuttles and Automatic Shuttles on W-3, C-4, C-5 Convertible Looms; Longer Filling Package Shuttles for Draper Looms; Quarter Turn Tension Eye Locked Adjusting Screws.

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John Wyatt, P. O. Box 701, Greensboro, N. C.
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backed by experience serving major steel, chemical, textile and food industries in erection of

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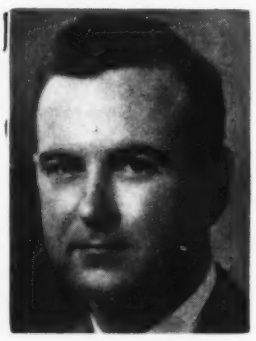
COMPANY.....
ADDRESS.....
CITY.....ZONE.....STATE.....

(TEAR OUT AND MAIL)

News About **MEN** (Continued)

E. M. HOLT

W. H. WHITE



M. J. GARDNER

P. C. GREGORY

E. CONNELLY

EDWIN M. HOLT, WILLIAM H. WHITE, MARSHALL J. GARDNER, AND PERCY C. GREGORY have been elected vice presidents of Cone Mills Corp., Greensboro, N. C. EDWARD CONNELLY has been elected assistant comptroller.

Knitters, Inc., Ware, Mass. He succeeds **William Hyland.**

George W. Little has been appointed general manager of the Hartsville Print & Dye Works, Hartsville, S. C., a division of U. S. Finishing Co. Mr. Little succeeds **James J. Mowry,** retired.

Thomas McCance has been elected to the board of Sidney Blumenthal & Co., Inc., Shelton, Conn.

Burke M. McConnell is rejoining Textron, Inc., as vice president, succeeding **F. A. Jenckes.** He will be located in Textron's New York office.

Howard R. Medici, vice-president and treasurer of Visking Corp., Chicago, Ill., has been elected to the newly created position of executive vice president. He will continue as treasurer and a director.

George M. Moisson, former assistant editor of TEXTILE WORLD in charge of bleaching, dyeing, and finishing content, has resigned to accept a position with California Hand Prints, Inc., Hermosa Beach, Calif.

John Kay Patterson Odell has been elected president and treasurer of Kerr Bleaching & Finishing Works, Concord, N. C. Mr. Odell succeeds his father, the late **Arthur Gould Odell.**

News About **MEN** (Continued)

Clipper
BELT LACING EQUIPMENT
For Belts and Tapes 1/16" to 3/8" thick

Industry's Most DEPENDABLE Belt Joints

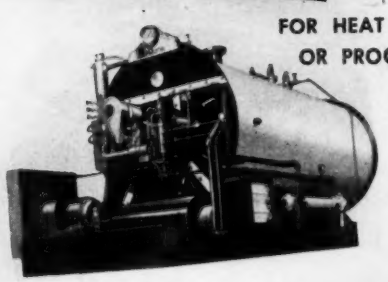
Proven by use and comparison, Clipper Belt Hooks assure longest service. Made from uniformly high quality, fatigue resisting wire produced exclusively to meet our rigid specifications. For easy application and maximum uninterrupted service, use GENUINE Clipper Belt Lacers. There is a type and size for your needs.

Ask your Industrial Distributor for CLIPPER Products.

No. 9 Portable Lacer

CLIPPER BELT LACER CO.
Grand Rapids 2, Michigan

STEAM
FOR HEAT OR PROCESS



Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

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SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

CALDWELL TANKS—
First Choice of the Textile Industry!

Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

ALL STEEL ECONOMY BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.

ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.

REPRESENTATIVES:
New York Office: 43 Water St.
Philadelphia Office: Drexel Bldg.
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Boston Office: 170 Summer St.
Other Sales and Service Branches in most Important Cities

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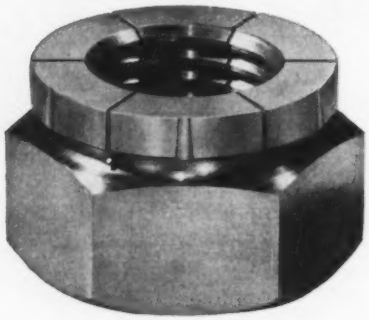
they're ONE piece, ALL metal...



no parts to work loose or get lost

Because they are one piece—nothing to assemble, come apart, lose or forget—FLEXLOC locknuts save production time. Because they are all metal, they lock and stay tight at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL CO., Jenkintown 35, Pa.

FLEXLOC LOCKNUT DIVISION

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JENKINTOWN PENNSYLVANIA

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News About MEN (Continued)

JOHN HAESLER has been elected a vice president and director of Duplan Corp., New York, N. Y.

William E. Reid has been elected executive vice president of Riegel Textile Corp., New York, N. Y., succeeding **William E. Barry**, who is retiring.

Earl D. Rhodes has been named vice president of F. C. Huyck & Sons, Rensselaer, N. Y. **W. Moe** was named general superintendent.

Morris Speizman has been named president and treasurer of Galax Knitting Co., Galax, Va. Other officers of the firm include **R. E. Bumgardner** and **Ted Valenstein**, vice presidents.

Donald B. Tansill, for the last two years executive vice president of M. Lowenstein & Sons, Inc., New York, has been elected president to succeed **Archie O. Joslin**, resigned.

OBITUARY

William J. Baker, 59, manufacturing superintendent at the E. I. du Pont de Nemours & Co., Inc., rayon plant, Buffalo, N. Y.

Edwin F. Greene, 74, former president and treasurer of Pacific Mills, Boston, Mass., and one of the founders of Lockwood Greene Engineers, Inc., New York, N. Y.

Franklin D. Griffin, former vice president and a director of Cheney Bros., S. Manchester, Conn.

John H. Holt, 82, retired treasurer of the Luther Mfg. Co., Fall River, Mass.

Nelson Jarvis, 74, a foreman at the Greenville Finishing Co., Inc., Greenville, R. I.

Arthur J. Lacroix, 68, president and treasurer of Jordan Woolen Co., Waterford, Conn.

Robert A. Leeson, 76, chairman of the board and former president of Universal Winding Co., Providence, R. I.

Paul Lenk, 71, retired general manager of Ruby Ring Hosiery Mills, Philadelphia, Pa.

John W. Lister, 62, vice president of the Allendale Co., Centredale, R. I.

George W. F. Mullis, 72, vice president of Interwoven Stocking Co., New Brunswick, N. J.

Thomas S. Ramsdell, 72, retired vice president of Monument Mills, Inc., Housatonic, Mass.

Lester J. Ross, 62, president of the Torrington Co., Torrington, Conn.

C. Eugene Schneider, 70, president of the Schneider Dye Works, Philadelphia, Pa.

Andrew W. Siloway, 69, retired overseer of Pacific Mills, Boston, Mass.

Jack P. Stockton, 62, a former vice president of Spartanburg, S. C.

William Kenneth Stringer, 80, founder of Kenneth Cotton Mills, Walhalla, S. C.

Henry Baxter Taylor, 69, retired plant engineer for the Slater Mfg. Co., Slater, S. C.

John F. Tourhaud, head designer at Cheney Bros., S. Manchester, Conn.

Edwin R. Warfield, 70, president of Hamlet Mills Co., Otter River, Mass.

William Henry White, 59, plant superintendent of Republic Cotton Mills, Great Falls, S. C.

SEARCHLIGHT SECTION

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

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DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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The advertising rate is $12.65 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W

SEND NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y., for March issue closing February 15th

POSITIONS OPEN

We can place—GEN. SUPT. large cotton mill, excellent salary; supt. combed cot. yarns; print works mgr.; executive to take full charge warp knitting; woolen yarn and cloth supts. (3); supt. thread mfg.; production mgr. knit lingerie; supt. jacquard upholstery fabric mill; supt. cot. piece goods bleach., dye, and finish.; asst. to pres. yarn converting plant; pile fabric technician and designer; designers and asst. supt. for woolen, worsted, rayon and cot. mills.

OVERSEERS for corduroy finishing; woolen frame spinning; sewing; woolen raw stock and piece goods dyeing.

CHEMISTS, chem. engineers and laboratory men for mills, also demonstrating and selling; plant engineers, mech. engineers, master mechanics, designers and draftsmen; garnett foremen and fixers; jacq. loom fixer; corduroy cutter and fixer; time study and industrial engineers; dyestuffs salesman Philadelphia area.

FIXERS—FOREMEN for Wildman, full fashioned, latch needle, Scott & Williams, Komet and sewing machines.

If you are available for one of the positions listed here, or for any other executive position in textiles, SEND US PROMPTLY YOUR RESUME. It will be in STRICTEST CONFIDENCE. No charge unless position is accepted through our Service.

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294 Washington St., Boston 8, Mass
Telephone Liberty 2-6547
Over 55 years in business placing and in supplying textile mill executives.

WANTED
MASTER TEXTILE MECHANIC-MACHINIST

Want man with ideas and ability to improve present machinery and to design and build new machinery. Interesting opportunity and fine future for right man.

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CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

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POSITIONS WANTED

EXPERIENCED SKETCHMAKER wishes position in Print Works or Job Shop. U. S. location preferred, Canada, Central or South America considered. PW-9857, Textile World.

Knitter-Mechanic, Machinist and Technician, builder of various types of Knitting machines, broad experience, inventive ability, wishes to relocate. PW-1156, Textile World.

(Continued on the following page)

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TEXTILE PLANT
South American location

Exceptional opportunity for an experienced plant manager to direct operations of a South American plant producing spun rayon yarns on cotton system, warp knitting of continuous filament yarn, some circular knitting, weaving of continuous filament and spun rayon; and doing its own dyeing and finishing. Salary $20,000 per year. Submit detailed and complete resume indicating age, education, family responsibility, experience, date of availability.

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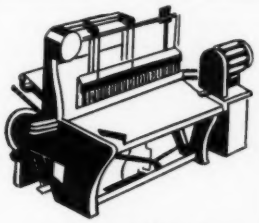

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New synthetic fiber plants and research facilities located in the Southeast and Florida coast. Men qualifying in the openings listed below are invited to apply:

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Excellent working conditions and employee benefits. Salary commensurate with experience and ability. All replies confidential.

Send complete resume to

P-1494, Textile World
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New England mill has opening for man experienced in styling and development of pile and/or flat fabrics. Write giving complete resume. All replies held in strictest confidence.

P1222 Textile World
330 W. 42 St. New York 36, N. Y.

POSITIONS WANTED
(Continued from preceding page)

YOUNG MAN, college graduate is looking for a position in weaving mills. Speaks English, French, Spanish. Available anywhere. Write PW-1548, Textile World.

WANTED: A position as Cotton Mill Supt. 15 years experience as Supt. & Gen. Supt. 4 years over plain weave Mills 11 years over yarn Mills. Largest yarn Mills 182,000 Spindles. Experienced on Spun Rayon & Nylon. Can go anywhere. Prefer South or Southwest. Guarantee high quality yarn. Age 45. PW-1405, Textile World.

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Man 25 yrs. experience in all phases of mill operations, some technical experience, desires position as cloth room man or asst. to busy mill executive. Handle people, accept responsibility, produce results. Best references. Locate anywhere. PW-1181, Textile World.

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With practical experience in bleaching, dyeing, and finishing of cottons and rayons. Experience in writing for publication preferred. Give details on education, former connections, age, salary, etc., in first letter.

P-1459, Textile World
330 W. 42 St., New York 36, N. Y.

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RA-1301, Textile World
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FOR SALE

(Additional For Sale Ads on pages 271-279)

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1500 Loom Motors, ½ H.P. ¾ H.P. 1 H.P. 550 & 220 V.
300 Electric Stop Motions complete, 4 & 6 bank
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400 Roper let-offs complete
150 Loom Beams, 24" dia. x 44" b/h NEW DRAPER
500 Loom Beams, 20" dia. heads 40", 46", 48"
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2500 Pick Gears, Stafford, K, C&K looms
1000 set Stafford Cutter units complete
500 Pick clocks—Waltham, Durant, Veeder Root
500 Batteries complete for Draper Looms

1 66" 4 Blade Hermas shear
6 H&B Twisters 3"g. 240 sp. band drive
2 H&B Twisters 5-½"g. 120 sp. band drive
40 H&B & T&S Cards, 37", 10" coilers
4 Single Process & Finisher Pickers, 37"
1500 10" Roving Cans
3 sets 5 & 7 ft. Slasher drums & size tanks
2 S/L size kettles, 242 gallon
1 B/C Cheese Creel VC318, 1949
3 Universal Cone Creels 400 end
1 H&B Tomlinson Waste Opener
2 Roving Bobbin Strippers
10,000 Spindles spinning tape drive conversions
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1 Vacuum stripping tank & pump

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$500,000 Spent on New Equipment in Recent Years

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VAN DORNE STAINLESS STEEL 3 COMPARTMENT OPEN WIDTH WASHER
VAN VLAANDEREN 10 TON PADDER
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MODERN FINISHING RANGE:

VERDUIN 60" PADDER, 10 TON
VAN VLAANDEREN 120' LONG TENTER FRAME, WITH INDUSTRIAL AIR 90' LONG HOUSING, GAS FIRED.

6—Blickman Stainless Steel Totally Enclosed Dye Boxes, 14' wide, roll-up doors, temperature controls.
2—Proctor & Schwartz Cure Dryers, with Brown instrument controls.
2—Van Vlaanderen Hydraulic Calenders, 72" wide and 60" wide, hydraulic pumps and drives.
1—National Loop Dryer, 16 fans, 48' long, Model E, W/Stainless Steel cooling drums.
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2—Stainless Steel Sample Dye Boxes, 2' & 4' wide, double compartments.
1—Van Vlaanderen Stainless Steel Dye Jigg, 60" wide.
1—Van Vlaanderen Tenter Frame 40' long x 72" wide, with stainless steel clips, gas burners, dampening device.
1—Van Vlaanderen 72" Gas Singer, vari-speed drive.
1—Van Vlaanderen 50" Semi-Decator, blanket & pump.

Addition Items:

Beamers 60"-68" wide; Hi-Speed Tubers 54"-63" wide; Examining Machines 62"-78" wide; Cloth Trucks, Supplies; Mixers; Stainless Steel Pails & Batch Cans; Dippers; Office Furniture; Office Equipment; Simpson Batchers; Cloth Guiders.

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1—100'x66" Van Vlaanderen Tenter with 2 roll 70" 10 ton V.V. Pneu. Pad, 66" Mt. Hope Scray Box, 88" Proc. & Schw. Housing, gas heat, Reliance V.S.D.C. Gen.

1—100'x66" Van Vlaanderen Tenter, 60" 10 t. Werner Pneu. Pad, overhead predryer, 74' Nat'l. Dry. Mach. Housing, steam heat, Reliance V.S.D.C. Gen.

1—50'x66" Van Vlaanderen Palmer-tener & Pad with 4" clips, 9 carbomat. burn. w. blower), power opener, elec. eyes, steam box, V.V. 70', 10 t., 2 roll pneu. pad., Foxboro Cont., Reliance V.S.D.C. Gen.

1—72" Hennekins Boil-off, S.S. conveyor.

1—2 line 62' Proctor & Schwartz Loop Dryer, 102" face rev. poles, 95 h.p. circ., 33 h.p. exh. fans., Llewellyn Drive.

4—Van Vlaanderen 60" to 65" Beamers.

2—54" Emboss. Machs., wt. and lev. pres.

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1—66" Van Vl. 7 Drum Setting Mach.

4—60" Van Vl. Jigs, S.S. tubs & rolls.

6—60" Van Vlaanderen Constant Speed Jigs, S.S. tubs, idler rolls.

14—60" to 71⅛" Werner Jigs (5 with S.S. enclosures), S.S. tubs, idlers, etc.

7—6' to 10' Van Vl. Duplex Dye. Machs., S.S. tubs, reels, etc., Foxboro Controls.

4—6' to 10' x 9' x 40" Blickman Totally Enclosed Dye Boxes.

2—6' x 8' x 42" Werner Dye Boxes, S.S. with S.S. reel and pony reel.

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1—American Laundry Mach. Tumbler, 3 Compartment, all S.S.

2—60" two roll Werner Pads (1 micro-set, 1 pneumatic).

1—70" Werner S.S. 23 Can Vert, Dryer.

1—70" Werner S.S. 24 Can Horiz. Dryer.

1—72" Birch Bros. Scutcher.

1—60" four color Modern Tex. Mach. Printing Mach. with washer (S.S. dry. cans w. rot. joints, flex. hoses, headers, etc.) 60' overhd. dryer w. fin coils and h.s. fans.

1—60" Werner 1 color Prntg. Mach., 21' Overhead dryer, coils and h.s. fans.

1—60" Werner Stencil Prntg. Mach., 125' dryer, coils and h.s. fans.

1—50" four roll 50 T. Perkins hyd. Calender (2 cotton, 2 chilled iron rolls).

1—60" four roll 20 T. Van Vlaanderen Hyd. Calender (t. roll gas heat, b. roll steam).

1—55" two roll 20 T. Verdun Friction Calender (1 paper roll, 1 Chrome plate roll elect. heated).

1—70" Windsor Jerauld Duplex Batcher.

1—58" Van Vlaanderen Decatizer.

5—60" Van Vlaanderen Constant Speed Tubers with measuring drums.

2—64" Progressive Reverse. Exam. Mach.

2—78" Werner Reverse. Examining Machs.

2—New 68" Burlington High Pressure Dyeing Mach. 316 S.S.

Miscellaneous dye house, laboratory and mach. shop equipment.

All machines have individual drives and 3 phase A.C. motors. All machines offered subject to prior sale.

MANY MORE WET PROCESSING MACHINES FOR SALE. SEE THEM NOW.

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JOHNSON 7-DRUM, 60" x 30", STAINLESS STEEL, 1948
C & K 72", 4 x 4 WITH GARFIELD FEELERS

COCKER 9-DRUM SLASHER 60" x 30" Stainless Steel, year '47

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1—Werner 60"x60" Palmer
1—Textile 6-Roll 45" Calender
4—Morrison 60" SS Lined Jigs
1—Curtis & Marble 114" Brusher
1—set 32 copper 113" Dry Cans
1—Butterworth 4-Roll 80" Mangle

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250M Drawtex Heddles, 15"
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1650 Hed. for 80"—14" Hed.
1500' Double Belt, 3"
2M Roving Cans, 10"—12"x36"
350M A. L. Bobbins 8¾" (select)

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12 Whitin Model H Combers, 12" Coilers, 1942 Model
35 H & B 40" R.F.T. Cards
5 sets Davis & Furber 2-cylinder Waste Cards, 48" x 48", automatic feeds, metallic breasts, intermediate feed tape condensers
1 Allen Billmeyer Vacuum Pump, 75 H.P. capacity for Abington Stripping
1 United States Hoffman 6-stage Air Compressor, 50 H.P. capacity for Abington Stripping
3 Abington Vacuum Stripping Receiving Tanks Piping for Abington Stripping, various sizes, with couplings
4 Frames Whitin K-2 Bi-coil Drawing—4 deliveries eac. (1944)
4 Saco-Lowell 10 x 5 Intermediates, 84 spindles ea. Whitin Super-draft
4 Whitin 8 x 4 Slubbers, 160 spindles each, H & B 5-roll high draft
2 New Parks-Cramer Type CT-3 Traveling Cleaner Units (never used)
115 Fletcher Rayon Twisters, 4-½" gauge, ½ lb. package, 188 spindles ea., M.D.
2 New Stainless Steel Cotton Slasher Hoods
1 Entwistle Rayon Warper, with 800-end Magazine Creel
3 Sipp-Eastwood 800-end Magazine Creels, for rayon, 1946-47 Model
3 Reiner 600-end Creels and 21" Warping Machines, Model SW24, M.D.
1 Barber-Colman Tailing Machine, Model TM—1948, 18 spindles
3 Whitin-Schweiter Winders, Model MS, 21 spindles each
1 Universal No. 44 Roto-Coner, 120 spindles for paper cones, 9° 15'
8 Foster No. 102 Winders, 100 spindles each, paper cones, paper tubes, wooden cones, wooden tubes
24 Universal No. 50 Winders, "L" Drive, M.D., with cone, tube or Arnold tubes, as desired
2 80-spindle Abbott automatic Quill Winders, M.D.
2 C. & K. Sample Narrow Fabric Looms, 2 space, 4" reed space
18 C. & K. W-3, 92" Looms, Convertible type, M.D.
150 C. & K. S-5 Looms, 56" between swords, 25 harness dobbies, M.D., 1941-42 Model
18 C. & K. S-3 Looms, 52" between swords, 20 harness dobbies, M.D.

Equipment from Liquidation of former
ARLINGTON MILLS
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20 James Smith 3 circle Noble Combs
Complete Abbott spool Dyeing and Drying System
4 Warner & Swasey Dual Pin Drafters, Model M2350—1948
9 Whitin Model BW Worsted Ring Spinning Frames, 4" pitch, 3" rings, individually motor driven
7 Prince-Smith Ring Spinning Frames, with Whitin Change-over, over-hauled and installed 1947, 3-½" pitch, 2-¾" ring, 200 spindles each
20 Whitin Model L Ring Trap Twisters, 188 spindles each, 3-¾" pitch, 3" ring, 9" traverse, individually motor driven
35 Whitin Model B Ring Twisters, tape drive, 200 spindles each, 3-¾" gauge, 2-½" ring, 7-⅝" traverse, 200 spindle creel
3 Whitin Model B Fancy Ring Twisters, 200 spindles each, 3-¾" gauge, 2-½" and 2-⅛" rings
5 Whitin-Schweiter automatic Filling Winders, Model MS 30 spindles each (2 units 15 spdls. each) motor driven
1 85" Saco-Lowell Hot Air Slasher, motor driven
78 Draper Modified D Looms 81" Reed Space, 2 x 1 Box, individually motor driven
108 C. & K. automatic Model W-2 4x1 Box Looms, 81" Reed space, 20 Harness Gem Heads, individually motor driven
7 68" Rodney Hunt Stainless Steel 8 string Dye Kettles, totally enclosed, motor driven
2 Riggs & Lombard 12-string Continuous Washers, 12 tubs, Foxboro pneumatic controlled Padder, motor driven
2 72" Arlington Vacuum Extractor and Scutcher
2 Riggs & Lombard Fleetline Yarn Conditioning Machines with automatic controls, stainless steel
3 Ingersoll-Rand Air Compressors, Type ESE-1, size 20" x 13", 1946 models, equipped with 125 H.P. synchronous motors, D.C. exciter units, silencers, control panels, switches, after-cooler and receiving tank
66"—72" and 80" Open Crab Machines
Prince-Smith and Saco-Lowell Intersecting Gill Boxes, single and double head, 2-ball delivery
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23 C. & K. Terry Towel Looms, Model C-3, 34" between swords, M.D.
100 Draper Model E Towel Looms, 24" Cloth, M.D.
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38 Draper Model K Looms, 49-½" Reed Space, individually motor driven
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1 Royle 400-hook Jacquard Repeater
1 Royle 400-hook Jacquard Lacing Machine
1 Terrell Type L Rayon Bobbin Stripper
1 Penn Reed Cleaner, handle 2 reeds up to 72" wide, ball bearing, M.D.
2 Measuregraph Cloth Inspecting and Tubing Machines, 52" wide, M.D.
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1 48" Textile Machinery Co. Simplex Sanforizer, complete unit, M.D.
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1 54" Van Vlaanderin Embossing Calender with new extra rolls, 1947, M.D.
1 66" Van Vlaanderin 50' Clip Tenter Frame, S.S. High Speed Clips, 1947, M.D.
24 Reiner Model RT1 Tricot Knitters with 168", gauge 28, individually motor driven, 1946, 1947, 1948 Models
1 Ingersoll-Rand Air Compressor Unit, twin type XRE 60-½ x 10, with 150 H.P. synchronous motor complete with Air Receiving Tank, After Cooler, DC Generator and panel board.

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30 50" Dry Cans
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80—Universal #50 Winders, GearGain, (1942-1949).
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DYEING MACHINES
2—Smith Drum Rotary Dyeing Machines, 300 lb. and 200 lb., in excellent condition; and 1—48" Troy Monel Metal basket Open Top Extractor, late type, motor driven, excellent buys, very reasonably priced.
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4— 6' Riggs Lombard Stainless Steel Dye Kettles
2—10' Riggs Lombard Stainless Steel Totally Inclosed Dye Kettles
1—12' Riggs Lombard Stainless Steel Dye Kettle
2—20' Riggs Lombard Stainless Steel Totally Inclosed Dye Kettles
1—20' Rodney Hunt Stainless Steel Totally Inclosed Dye Kettle
6—Riggs Lombard 2 roll Hydraulic Padders, 70" x 17" rolls
10—69" Measuregraph Machines
2—Hunter Pin Tenter Dryers, 69"
1—Proctor & Schwartz Pin Tenter Dryer
1—National Loop Dryer
Stainless Steel Dry cans, 72"
Stainless Steel Mixing Kettles with Portable Mixers
Most of the above equipment is 1950 or later
40—Draper Model XD Looms 46" cloth, Brown Spring Top, 1 H. P. 550 Volt Motors, 1941.
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1—Set 72" Perlata with Broadband Feed
6—Brownell 84 sp Twisters 7x4 Spool
Several 7" ga. 5½" ring Twisters
10—S-L 200 sp 4" ga. 3" r. Twisters
1—Kitson 3 cyl. Waste Machine
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FOR SALE

McKittrick Co. owns and will sell at a bargain price for immediate sale the following equipment located at the former

PARIS FABRIC MILL IN COLUMBIA, PENNA.

In one lot if possible. Will consider selling looms as separate lot. This machinery was new in 1948, has not operated since 1951 and is in excellent condition.

WEAVING

56 —C&K 56" Model S-6 Automatic 2x1 Box Looms. L.O. #16,088 (yr 1948). 20—Harness Dobbies. 3—shift pick clocks. Signal lights. 10 Bank C&K Elec. Warp Stop motions (equipped for 4-banks only with drop wires.) Ratchet take-up. Automatic Payne Let-off. Dble temples. Center filling fork. C&K #28A Feeler motion. Wood lags. Glass rod on Breast Beam. Now set for 7-3/8" Bobbin. Motor Drive GE 1-HP 220/60/3/1760 Motors & Pedestal type switches. Quill board holder. With each loom there are 1-1/4 Steel loom Beams 24" flanges. 1-3/8 Wood cloth rolls 54". 12-Harness frames with 13" S.S. Heddles. 170 lbs. weights. 2-Shuttles 15-3/4 x 1-3/8 x 1-1/4. Pick gears. Dobby Bars. C&K canvas bobbin basket.

10M—(Est.) Auto Loom Bobbins 7-3/8 x #5 Butt for electric feelers.

149 —Loom Reeds—S.S.

1 —Spare Loom Motor GE 1-HP 220/60/3/1760

82 —S.S. Quill Boards for 60 Quills (will take either Butt)

169 —New Electrodes

100M—(approx.) New Dropwires

60M—(approx.) Used Dropwires

LOT NEW Loom repair and supply parts of all kinds. This is a large lot.

Lot—Used loom parts or equipment used on looms for various kinds of work.

2—Pipe Construction Warp tying-in frames.

2—Wood Construction Drawing-in frames.

1—Metal Pipe rack for harness frame storage.

3—Iron Dble Side Loom Beam Storage Racks. (3-Beams per side)

WEAVE ROOM SMALL PARTS STORAGE

1—Steel Parts Bins. 36" oaw x 18" osd x 87" oah. 8-shelves plus 18-drawers (5-1/2 x 3 x 18).

1—Steel Parts Bins ditto with 7-shelves and 36-drawers.

2—Wood Parts shelves & bins. 4-shelves ea. plus 28-Bins. 48" oaw x 22" osd x 96" oah.

1—Wood Work Bench Cabinet 72 x 30 x 36 oah. 36" oah. 3-doors & 3-shelves.

1—Wood Work Bench Cabinet 72 x 30 x 36 oah. 3-Doors & 3-shelves. (also 1-room full of loom parts storage)

WARPING

1—Sipp-Eastwood 101" Horizontal Warper Type DT. Ser #8377. GE 2-HP 220/440/60/3/1735 RPM motor drive by flat belt to beaming end and also to friction drive for main cyl. Reed stand & loose reed.

1—Sipp Portable Pin Creel 504 ends. 4-1/2 x 4-1/2 ga. Complete with glass rods and 2-Glass reeds.

TRUCKS

1—Metal Truck 34 x 34 x 40" oah. 4-solid shelves.

4—Single Metal Pin Board Rack trucks. 4-Rubber swivel casters. 4-Tier x 2-Pin Boards. 10-1/2W x 3-1/2L x 42" oah.

1—Single Metal ditto 16 x 32 x 47" oah. 4-Tier x 3 P. Boards.

2—Double Metal ditto 20-1/2 x 31 x 41" oah. 4-Tier x 4 P. Boards.

2—Wood 4-wheel Trucks 27" osw x 60" oal x 71" oah. Open ends. 1-shelf.

INSPECTING

1—Hermas 66" Model GC-30 Inspecting, Measuring & Tubing Mch. Ser #GC3719. Inspecting Table 71 x 28 with fluorescent backlighting. Variable Speed. Forward & reverse. Chrome roll. Veeder Root counter by 1/8 yds. M.D. 110/60/1. yr 1948.

1—60" Inspecting-Measuring & Tubing Mch. yr 1948. Inspecting table 66 x 28 with fluorescent backlighting. Reeves vari-speed control. No reverse. Veeder Root counter by 1/8 yds. M.D. 110/60/1.

MISCELLANEOUS

1—Mahogany Dble Pedestal 52 x 32 Flat Top Desk. Legs.

1—Red Leather Upholstered Arm Chair.

WOOLEN MACHINERY

PICKING

1—D&F 48" Improved Burr Picker 1941.

1—D&F 54" Bramwell Picker Feed.

2—D&F 48" Fearnaught Pickers, M.D.

1—Sargent 6-1/2' Cone Duster w/fan.

1—S-L English Type Rag Picker.

3—Clark & Dodge Am. Std. Rag Pickers.

2—Sturtevant #7 Design 3 Stock Blowers, M.D.

CARDING

1—D&F 3 cyl 60 x 60 T-slot Arch Card. D.A. Tape. Peralta. M.D. 1944.

2—P&S and S&F 3 cyl 60 x 60 Iron Cards. Broadbands. Tapes. Peraltas. M.D.

2—D&F 3 cyl 60 x 54" dia. Iron Cards, Broadbands. Tapes. Peraltas. M.D.

2—P&S and S&F 3 cyl 60 x 54 dia. Iron Cards. Broadbands. Tapes. Peraltas. M.D.

4—Duesburg-Bronson Sets 60" Peralta Rolls.

2—Duesburg-Bronson Sets 48" Peralta Rolls.

2—D&F 60" x 4 Bank S.A. Tape Condensers. 120 ends.

1—D&F 60" Broadband Int. Feed.

2—D&F 3 cyl 48 x 60 dia. Iron Cards. Broadbands. Tapes.

SPINNING

4—Whitin 120 spdl x 6-1/2" ga. x 5" Ring Mdl E Spg Frames. 1937 Models. Ex. Cond.

3—D&F 120 x 6-1/2 x 5" Ring Mdl E Spg Frames. Yr 1945.

15M—Mdl E 12-1/8" Spg Bobbins.

SPOOLING—DRESSING—WINDING

6—WCMCo 48" Mdl NL x 48 end High Speed Jackspoolers. Botl Drum 17-1/4" dia. 3-HP Reeves Variable Speed Drives. 1948.

200—Vermont 48 x 12 Dresser Spools.

1—P&S Attemus Type 100" Pinless Dressing Unit. Sidstrom 2 HP Variable Speed Drive. Beamer. Warp Comp. etc.

1—Whitin 120" Mdl K Drum Dressing Reel Unit Complete with Mag Creel. Beamer. Warp Comp. etc. 1945.

1—D&F 48" Pin Type Sample Dressing Reel Unit.

1—D&F 118" Pinless Dressing Reel, M.D. 1941.

6—Whitin 21 Spdl Schweiter Filling Winders. M.D.

WEAVING

4—C&K 100" Mdl W 3 Automatic 4 x 1 Box Blanket Looms. Multipliers. M.D.

6—C&K 84" Mdl W 2 Automatic 4 x 1 Box Woolen Looms. M.D.

2—C&K 88" Automatic 4 x 1 Box Woolen Looms. 10-1/8" Bobbin. M.D.

FINISHING

2—R&L Mdl 65 Fulling Mills. M.D.

1—R&L 8' Mdl 106 Rubber Roll Cloth Washer. M.D.

1—J. Hunter Set 78 x 18 Pneumatic Rubber Squeeze Rolls.

2—Spare 72 x 18 Hunter Rubber Cloth Squeeze Rolls.

1—Spare 78 x 18 Hunter Rubber Cloth Squeeze Roll.

1—C&M Dblg & Tacking Mch Range. Merrow Hd.

1—Am. 48" open top, Tinned copper basket Extractor. Side mtr. Dr.

1—Kenyon 80" x 80 yd Baking Unit for Cloth Carbonizing. 1944.

5940—Kenyon Long Gill Plates. Dble Row 15 Pins 18-1/2 x 1/2 K-monel. NEW.

4—P&W 66-1/2" Veritex Model Floor Type Power Inspection Perches. M.D. Reversible. 1949.

1—Gessner Full Decater Unit. 2 Winding & 2 Cooling Frames. Carriage. 5-Leaders. Foxboro (New—original Case) Automatic Control Valve. Mtrs., Pumps, Etc.

1—Gessner 72" Mdl PD 20 Rotary Cloth Press. Reeves Drive. Mtor.

1—Spare Gessner 72 x 20 Cyl for Mdl PD 20 Press.

2—MacBeth Type BX 866 Skylights for Color Matching. 1950.

1—D&F 24 Roll x 72" Dble Acting Napper. M.D.

1—Woonsocket 36Roll x 90" D.A. Napper. M.D.

1—Trumeter—Woodco Model.

DYEING

1—R&L 500# S.S. Hi-Temperature Raw Stock Dye Kettle Unit. Cycle Log Control. 1953.

2—Morton 6—750# S.S. Raw Stock Dye Kettle Units. 1946.

2—Morton 50# S.S. Raw Stock Dye Kettle Units. 1947.

2—Spare S.S. Racks for Morton 6—750# Kettles.

1—Sargent 8 Sect x 8' Raw Stock Drier. 8' Rotary Feed. Mtrs. 2-Foxboro Temp Controls etc. 1949.

1—Sargent 50" pneumatic Squeeze Rolls w/ mdl N Pit Feed. 1949.

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2—Merrow A3D Blanket Overedging Mchs.

3—Tillinghast Rotary Foot Power Sew Mchs.

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1—Whitin E-3 Card Feed, 60"
5—D. & F. & Sargeant 6, 8 Bar Mixing Pickers
2—48" D. & F. Fearnought Pickers
6—18"—24" Shoddy or Waste Pickers
2—36"—48" Burr-Pickers
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Universal 50's & 90's rebuilt
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1—Gessner Mod. 20 Press. 1950
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1—Set (6) Copper Dry Cans, 70"x36"
1—Wetting-Out Tank, S/S Lined, 62"
1—P. & W. 72" Steam Luster Machine
1—Crab, 3 bowl, 72" Yorkshire Type
2—Birch Doub. & Tack. Mach., 92"
2—Teasel Gigs, Doub. Cyl., 60"
1—P. & W. Cloth Doubler, 66"

MISCELLANEOUS

4—Macbeth Color Matching Lamps
1—72" Latex Coating Machine
1—P. & S. Cyclone Dust Collector, 1949
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☐ **Encourage personnel** to attend Red Cross First Aid Training Courses.

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E. Dyeing, Finishing, and Cloth Room Equipment and Supplies
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M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
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P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies

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Alemite Div., Stewart-Warner Corp.	136	M
Allen-Bradley Co.	3rd Cover	F
Allen Mfg. Co.	241	O
Allentown Bobbin Wks., Inc.	210	T
American Crayon Co.	258	E, I, R
American Lava Corp.	159	L, RT
American Monorail Co.	42	P
American Polymer Co.	251	C
American Pulley Co.	19	Q
American Textile Machinery Association Exhibition	16	N
American Viscose Corp., Textile Chemical Dept.	32	C
Andrews & Goodrich, Inc.	64	A, E
Armour & Co., Industrial Soap Dept.	179	C
Armstrong Cork Co. (Cots)	56-57	T
Armstrong Cork Co. (Roll Covering)	215	R
Atlantic Rayon Corp.	237	G
Atlantic Steel Co.	214	O
Atlas Electric Devices Co.	172	K
Baker & Adamson Products General Chemical Div., Allied Chem. & Dye Corp.	149	C
Ballymore Co.	264	B
Barber-Colman Co., Textile Div.	259	R
Barco Mfg. Co.	206	H
Bemis Bro. Bag Co.	204	P
Bendix Avation Corp., Eclipse Machine Div.	253	T
Bersworth Chemical Co.	252	C
Binney & Smith, Inc.	266	E, I, R
Boger & Crawford	152	G
Booth Co., Benjamin	191	T
Borne, Scrymser Co.	203	C
Bristol Co., The	40	K
Brush Electronics Co.	228	K
Butterworth & Sons Co., H. W.	130	F
Caldwell Co., Inc., W. E.	267	B, F
Carbic Color & Chemical Co., Inc.	197	C
Carniti & C., A.	49	T
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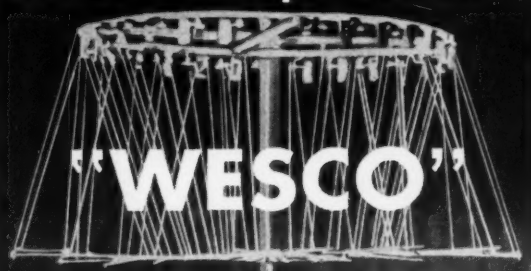

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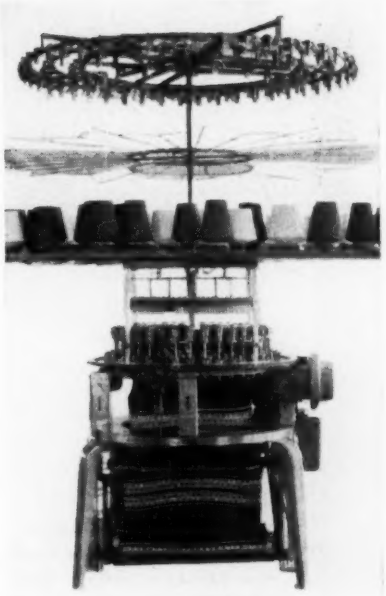

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Chemstrand Corp., The	66-67	G
Chesapeake & Ohio Railway	208	N
Ciba Co.	44-45	C
Cities Service Oil Co.	139	M
Clark Equipment Co., Industrial Truck Div.	145	P
Cleveland Process Co.	261	E
Clinton Foods Inc.	176	C
Clipper Belt Lacer Co.	267	Q
Cole Mfg. Co., R. D.	233	B E
Colgate-Palmolive Co.	10	C
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Commercial Factors Corp.	2nd Cover	N
Cone Mills Corp.	38	G
Corn Products Refining Co.	249	C
Courtaulds, Inc.	211	G
Crane Co.	54	H
Crane Mfg. Co.	241	L
Crompton & Knowles Loom Wks.	13	R
Cross Cotton Mills	36	G
Crown Engineering & Sales Co.	262	K
Crucible Steel Co.	165	O
Curtis & Marble Machine Co.	232	T
Custom Scientific Instruments, Inc.	265	K
Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.	209	B
Daniels, Inc., C. R.	242	P
Darnell Corp., Ltd.	224	P
Dary Ring Traveler Co.	244	T
Davis & Furber Machine Co.	192	T
Dayton Rubber Co., The	74-75	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	39	T
Dixie Leather Corp.	174	R
Dodge Mfg. Corp.	72	Q
Dow Corning Corp.	221	C
Draper Corporation	1	R
duPont de Nemours & Co., E. I., Dyestuffs Div.	193	C
Electrochemicals Dept.	243	C
Economy Baler Co.	267	P
Eisenberg Fibers, Inc.	264	G
Emery Industries, Inc.	53	C
Fafnir Bearing Co.	12	O Q
Felters Co., The	171	L RT
Fletcher Works	46	E
Foxboro Co., The	48	K
Franklin Process Co.	63	G
Gardner-Denver Co.	70	H
Gaylord Container Corp.	147	P
Geigy Chemical Corp., Dyestuffs Div.	2	C
Gemar Associates	265	N
General Chemical Div., Allied Chem. & Dye Corp.	149	C
General Dyestuff Corp.	207	C
Glasco Equipment Corp.	198	E
Goodrich Chemical Co., B. F.	235	C
Goodyear Tire & Rubber Co. Chemical Div.	9	C
Graphite Metallizing Corp.	246	O O
Graton & Knight Co.	174	Q R
Gubelin International Corp.	238	T
Gulf Oil Corp.—Gulf Refining Co.	21	M
Harwood & Son, Geo. S.	236	T
Haskell-Dawes Machine Co., Inc.	238	T
Hayes Industries, Inc.	134	R
Heim Co., The	30	R
Heineman Corp. O., Div. of Aetna Industrial Corp.	262	G
Herr Mfg. Co., Inc.	43	T
Hinde & Dauch	182	P
Holt Hardwood Co.	255	B
Hunt Machine Co., Rodney Textile Machinery Div.	141	E
Hunter Machine Co., James	71	E
Huyck & Sons, F. C.	258	E
Hyatt Bearings Div., General Motors Corp.	163	O Q

Ideal Industries, Inc.	22	T
Industrial Brush Co.	237	E
Industrial Heat Eng'g. Co.	230	E
Industrie-Werke-Karlsruhe	284	E
Ingersoll-Rand Co.	23	H
Ingolstadt	39	T
International Salt Co., Inc. Industrial Div.	205	C
Ives Co., L. T.	248	L
Jenkins Bros.	185	H
Jenkins Sons Inc., M. W.	178	E
Jiffy Textile Marker Co.	265	E L R
Johnson Corp., The	261	H
Johnson Machine Wks., Chas. B.	229	R
Keever Starch Co.	175	C
Kenwood Mills, Noone Industrial Fabrics Div.	258	E
Kidde & Co., Inc., Walter	217	RT
Kidde Mfg. Co., Inc.	247	L
Kuljian Corp., The	262	N
Laurel Soap Mfg. Co., Inc.	234	C
Lawlor Co., S. C.	236	D
Lazenby Co., F. A., The	240	T
Leighton Machine Co.	231	L
Link-Belt Co.	7	Q
Logemann Bros. Co.	62	P
Loper Co., Ralph E.	264	N
Lowell Shuttle Co.	216	T
Luxo Lamp Corp.	240	N
Main, Inc., Chas. T.	268	N
Manhattan Rubber Div.	52	Q
Manheim Mfg. & Belting Co.	55	Q
Manton-Gaulin Mfg. Co., Inc.	213	R
McCreary Machine Works, Inc.	18	E
Mellor, Bromley & Co., Ltd.	202	L
Merrow Machine Co.	212	E
Micro Switch Div.	227	F
Miller Motor Co.	17	E H O
Milton Machine Wks., Inc.	242	R
Minneapolis-Honeywell Reg. Co. Industrial Div.	76-77	K
Micro Switch Div.	227	F
Mount Hope Machinery Co.	263	E
National Aniline Div., Allied Chem. & Dye Corp.	25	C
National Ring Traveler Co.	28	T
National Starch Products	181	C
Naugatuck Chemical Div., U. S. Rubber Co.	161	C
New Departure Div. of General Motors	15	O Q
N. Y. & N. J. Lubricant Co.	168	M
N. Y. Quinine & Chemical Wks., Inc.	233	C
Oakite Products, Inc.	282	C
Onyx Oil & Chemical Co.	78-79	C
Pabst Brewing Co.	254	C
Parks-Cramer Co.	128	A D
Perfecting Service Co.	230	H
Pfister Chemical Wks.	223	C
Philadelphia Quartz Co.	236	C
Pick Mfg. Co.	251	E
Pittsburgh Coke & Chem. Co.	173	C
Pittsburgh Corning Corp.	177	B
Platt Freres S.A.R.L.	194	T
Platt Ltd., J. W. & H.	194	T
Pneumafil Corp.	26	T
Proctor & Schwartz, Inc.	143	E
Raybestos-Manhattan, Inc., Manhattan Rubber Div.	52	Q
Reeves Pulley Co.	180	Q
Rhoads & Sons, J. E.	5	Q R
Ridge Tool Co.	184	H
Rohm & Haas Co.	151	C
Rollway Bearing Co., Inc.	58	O Q
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Ryerson & Son Inc., J. T.	132	O

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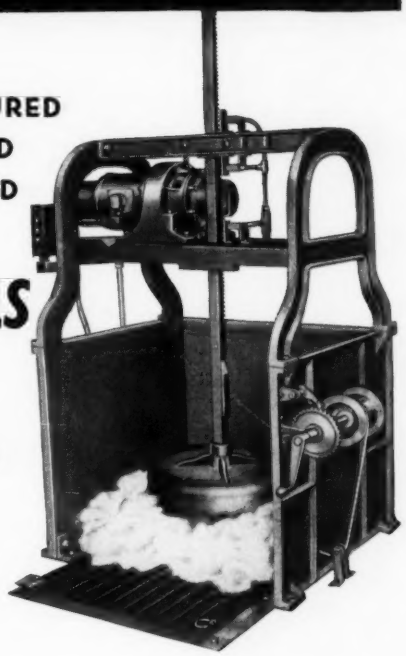

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Sayles Finishing Plants, Inc.	200	E
Schlafhorst & Co., W.	11	RT
Schramm, Inc.	226	H
Simco Co.	240	E L RT
Socony-Vacuum Oil Co., Inc.	31	C
Solvay Process Div., Allied Chem. & Dye Corp.	245	C
Sonoco Products Co.	33	E T
Southern Shuttles Div., Steel Heddle Mfg. Co.	41	R
Standard Chemical Prod. Co.	199	C
Standard Pressed Steel Co.	268	O
Steel Heddle Mfg. Co.	41	R
Sterling TNA • 5	205	C
Stewart Iron Works Co., Inc.	241	B
Sticht Co., Inc., Herman H.	256	E L RT
Stop-Motion Devices Corp.	281	L
Stowe-Woodward, Inc.	29	E
Superior Combustion Industries, Inc.	267	Q
Talcott Co., James	8	N
Taylor Instrument Cos.	24	K
Tennant Co., G. H.	218	D
Tennessee Corp.	257	C
Tensitron, Inc.	240	K
Textile Machine Wks. 34-35,	80	L
Toledo Scale Co.	222	K
Tompkins Bros. Co.	232	L
Torrington Co., The (Needles)	65	L
Towmotor Corp.	186	P
Turbo Machine Co.	167	L
Twin Disc Clutch Co.	220	Q
Unionmatex, Textilmaschinen-Union, G.M.B.H.	37	E RT
US Bobbin & Shuttle Co.	27	RT
U. S. Rubber Co., Naugatuck Chemical Div.	161	C
Universal Winding Co.	50-51	T
Veeder-Root, Inc.	4th Cover	K
Visking Corp., The	60-61	P
Waldron Corp., John	196	F
Warner & Swasey Co.	73	T
Watson-Williams Mfg. Co.	266	R
Western Felt Works	250	L RT
Westinghouse Electric Corp., Micarta Div.	68-69	O
Whitin Machine Works	14	T
Wildman Mfg. Co.	195	L
Willey & Co., Francis	256	G
Wolf & Co., Jacques	219	C
Wood's Sons Co., T. B.	225	Q

PROFESSIONAL SERVICES

Gemar Associates	265
Kuljian Corp.	262
Loper & Co., R. E.	264
Main Inc., Charles T.	268

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

EMPLOYMENT

Positions Vacant	269, 270
Positions Wanted	269, 270
Selling Opportunities Wanted.	270
Employment Services	269

BUSINESS OPPORTUNITIES

Offered	270

EQUIPMENT

(Used or Surplus New)

For Sale	270-279

WANTED

Equipment	279

ADVERTISERS INDEX

A. F. Machinery Co., Inc.	274
Attleboro Manufacturing Corp.	276
Berven Rug Mills Inc.	269
Bialek Co., Theodore	272
Blank Co., Inc., A. & M.	277
Blank, Moe	276
Bresani, Joseph	274
Collins & Aikman Corp.	279
Crescent Corporation	273
Egan, George W.	278
Fitzgerald, James F.	272
Gaines Textile Machinery Co.	274
Industrial Products of America	276
Julliard & Co., Inc., A. D.	279
Kiss & Sons Inc., John	277
Machinery Sales Corp.	270
Main & Sons, Robert	274
McCaffrey & Son, Inc.	272
McKittrick Co., Frank G. W.	275
Miller Machinery Co.	274
New England Products Co.	279
Pawtucket Mill Supply Co., Inc.	278
Pennsylvania Spool & Equipment Co.	277
Pilgrim Piece Dye Works	272
Rabinowitz & Sons, Wm.	277
Raymond Service Inc., Chas. P.	269
Republic Textile Equipment Co.	271
Rockland Webbing Co.	276
Solomon & Co., Inc., Robert	272
Southern Textile Works	274
Speed & Co., James	274
Spring Co.	270
Standard Mill Supply Co.	274
Stave & Kessler	274
Textile Auxiliaries	278
Wheeler Co., Frank W.	276
Whitehead Supply & Engineering Co.	276
Williams Laundry Machy Co., Inc.	274
Windle & Co., J. H.	277
Winona Textile Mills Inc.	279
Worcester Textile Co., Inc.	276

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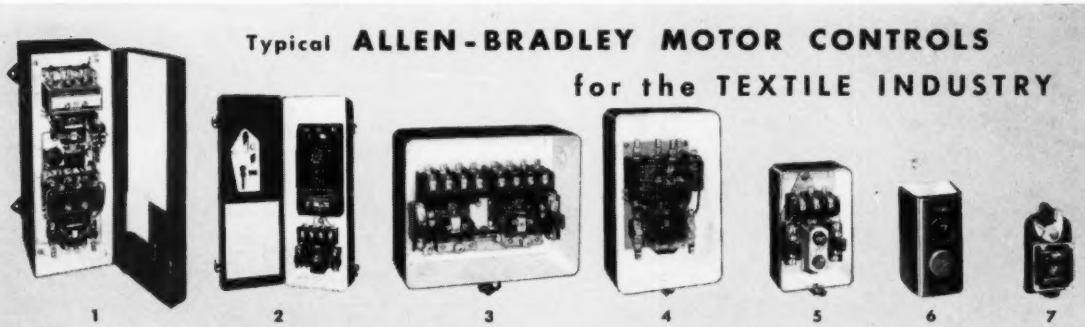
Allen-Bradley Co., 120 W. Greenfield Ave., Milwaukee 4, Wis.

Typical **ALLEN-BRADLEY MOTOR CONTROLS for the TEXTILE INDUSTRY**



1 Automatic Reduced Voltage Starter for velvet smooth motor acceleration.

2 Combination Across-the-Line Starter with circuit breaker.

3 Automatic Reversing Starter.

4 Automatic Across-the-Line Starter.

5 Manual Across-the-Line Starter.

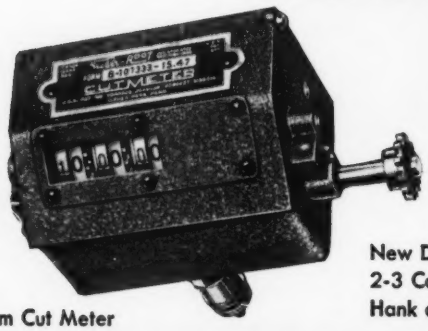
6 "Start-Stop" Push Button.

7 AC-DC Limit Switch.

ALLEN-BRADLEY *Quality* MOTOR CONTROLS FOR TEXTILE MILLS

It's Clean-up Time

Double-wheel Counter



Loom Cut Meter

New Design of
2-3 Convertible Pick,
Hank and Knitting Counters